TECHN DEPT.

Textile World

FEBRUARY, 1942

Textile World's Annual

FEATURING

Textile War Manual

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Full credit risk and responsibility assumed by Commercial Factors Corporation.

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COMMERCIAL FACTORS CORPORATION

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TEXTILE WORLD, Vol. 92, No. 2, February, 1942. Published monthly by McGRAW-HILL PUBLISHING CO., INC., (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. Editorial and Executive Offices, 330 West 42nd Street, New York, N. Y. Allow at least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 330 West 42nd Street, New York, N. Y.

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Weavers Complain of $1.00 a Week Loss in Wages on Looms where Shuttles Are Not Drapers

SHUTTLE TEST REPORT

That sounds excessive. In our experience it is an exceptional case.

But for years we have been overcoming loom troubles and improving our looms by Studying Extreme Cases. They emphasize common losses in production that go unnoticed in less extreme cases but that are, nevertheless, constant drains upon mill profits.

In the case in hand the mill was not satisfied with results from certain shuttles. We sent a service man who made a two-hour test on two lots of 36 looms each. Using Shuttle Test Report sheets, miniature shown above, which we are glad to furnish any mill for similar tests, he found:

On lot with Draper shuttles there were 4 stops;

On lot with (blank) company shuttles there were 20 stops.

Taking him for a representative of the makers of (blank) company shuttles, the weavers made the complaint of their loss in wages.

Lost Production from Poor Shuttles
Means a Profit-Loss to the Mill
and a Wage-Loss to the Weavers

Draper Shuttles Give Highest Production on Draper Looms

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia

Spartanburg S C

a Streamlined Floor MAKES FOR EFFICIENCY

Ford Adds to Workers Comfort With Maple

More and more, industrial surveys prove that as the working day advances, workmen's errors and accidents increase, due to fatigue — and that workers' comfort and production go hand in hand.

In units like this one at Ford Motor Company — the machine shop of the Engineering Laboratory — minutes lost today may mean days later on. So Ford gives these workers every energy-conserving aid — advanced machine equipment, a building glowing with light — and underfoot, a clean, comfort floor of Maple.

Maple is a floor that takes abuse with any, and yet is *comfortable.* So warm, dry, and resilient, it prevents loss of body warmth through conduction, protects workers' energy every precious minute. So smooth, too, that it speeds up traffic—both men and materials move with less effort. It saves minutes, saves energy, saves feet, saves nerves—steps up production, while its long life protects your flooring investment.

That's why today, you'll see Hard Maple floors being laid even in heaviest-duty plants. Before *you* build or remodel, ask your architect about **MFMA** Northern Hard Maple, in strips or blocks.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1793 McCormick Building, Chicago, Illinois

Floor *with* MFMA Maple

REG. U.S. PAT. OFF.

(NORTHERN HARD)

HIT NEW PRODUCTION PEAKS!

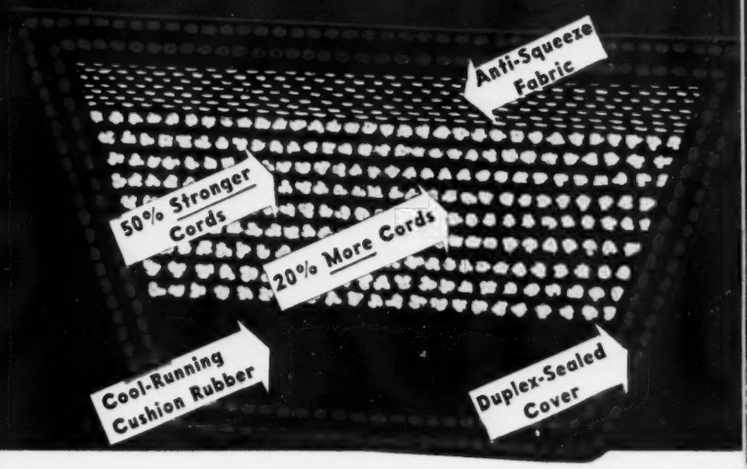
WITH NEW TEXROPE* SUPER-7

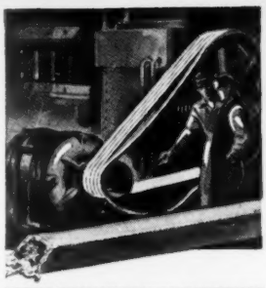
1 50% STRONGER CORDS! Sensational new Flexon process makes cords 50% stronger than even those in former great Texrope belts.

2 20% MORE CORDS! Count them! You get 20% more of these tough, extra pulling power cords in every Texrope Super-7.

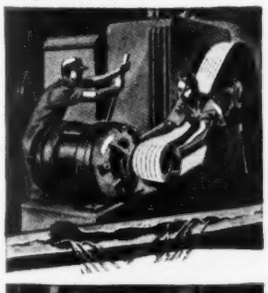
3 INCREASED LIFE! Cords float on amazing cool-running cushion rubber that absorbs shock . . . actually increases belt life phenomenally.

4 EXTRA PROTECTION! Exclusive duplex-sealed cover protects pulling cords against dirt, grit, moisture, and other adverse elements.

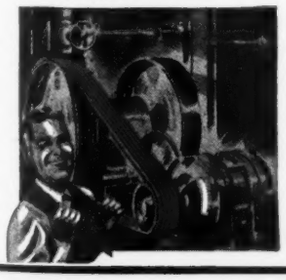




LOOK OUT FOR DANGER in belts with stiff, unpliable cords! Such belts *look* strong... but actually they buckle over sheaves, build up excessive heat that attacks pulling cords. Result: Belt failure far sooner than you expect it.



WARNING SIGN! Sagging, slipping belts mean too much stretch not backed up by balanced cord strength. Motor must be pulled back often to take up slack. Result: When stretch limit is reached belt breaks under tension.



SUPER-7 TEXROPE BELTS are made by amazing Flexon process that *combines* flexibility with low stretch... great strength. Cords float on cool-running, shock absorbing cushion rubber. Result: *true* strength . . . *true* pulling power . . . *true* endurance.

TO WIN the war—America needs top efficiency in the use of its power...

That's why Texrope Super-7 V-belts have a double-barreled value today. For here's a line of V-belts that has been designed and built to give you increased pulling strength and drive efficiency...plus longer belt life under the toughest war-time operating conditions.

In every way these belts are better—

You'll find they have 50% stronger cords! 20% more cords! A new rubber cushion section that effectively absorbs shock! Full protection against heat, dirt, moisture, and other adverse factors that quickly shorten the lives of ordinary belts.

You'll find, too, they give smooth, silent, slipless, high efficiency performance—in "matched" sets, and in sizes and types to meet your every requirement.

Whatever your war-rushed power transmission needs, don't be satisfied with anything but the best—*and that best is Allis-Chalmers Texrope Super-7—the V-belt for Victory!*

Call your Texrope dealer or the Allis-Chalmers district office near you. Or write Allis-Chalmers, Milwaukee, Wisconsin.

Available in All Sizes
½ hp to 2000 hp

A1473

ALLIS-CHALMERS

MILWAUKEE·WISCONSIN

*Trade mark registered U. S. Patent Office. Texrope Super-7 Belts are the result of the co-operative research and design genius of *two* great companies —Allis-Chalmers and B. F. Goodrich—and are sold exclusively by Allis-Chalmers.

RUBBER

Comments by Henry G. Lord

Once more war brings a challenge to chemistry. We are threatened with the lack of a vital raw material—rubber.

I recall when almost all rubber came from the Amazon Basin in Brazil, where the wild rubber tree furnished the comparatively small supply, that in those days was needed principally for rubber boots and shoes, raincoats, rubber bands, etc. Now only a negligible quantity of rubber comes from Brazil and more than 90% of the immense quantity used for tires and other new uses, comes from Malaya and the Dutch East Indies, from which we are now cut off.

Before Pearl Harbor it seemed reasonable to count on the British and American Navies to protect the sea lanes of the Far East. Since Pearl Harbor the picture has changed. Chemistry is once more called to the rescue with a "hurry-up" program to produce 400,000 to 600,000 tons of synthetic rubber annually.

I do not believe we have yet begun to realize the far-reaching significance of a rubber shortage. But there is one thing we can be sure of; if it is humanly and chemically possible to make good the shortage by producing the required amount of synthetic rubber, the American chemical industry will meet this crisis as it met the dyestuff crisis in the last war.

* * * *

Enemy submergibles are again doing their deadly work on our eastern seaboard.

My comment on "Dyestuffs by Submarine" brought an interesting letter from Mr. R. W. Boys, President and Treasurer of the Green River Mills, Tuxedo, N. C. He writes:

"Your 'Comment' brought to my mind the time when the 'Deutschland' popped up at New London, Conn. I was superintendent of the Goodyear Cotton Mills at Goodyear nearby. I was quite alarmed to think that a boat could come overseas during war time and turn up in New London. I went to see it, but they had boarded up that part of the deck and would not even let one look through the cracks in the boards.

"The 'Deutschland' left New London and went back to Germany, and sometime later, as you say in your article, it came back again to Baltimore with a lot of dyes. After she returned, I watched the papers and communicated with my sisters in England to get any news as to whether the 'Deutschland' had landed in Germany, but there was never any word. So for several years we never knew what happened to that submarine.

"After the war I made a trip to England and one day I was walking along the banks of the Thames with my nephew, and there to my great surprise, alongside a dock, was the 'Deutschland.' The British Navy had captured it. On it was a sign 'Visit the Deutschland—One Shilling.' So, I went aboard and all over it—in old London which I couldn't do in New London.

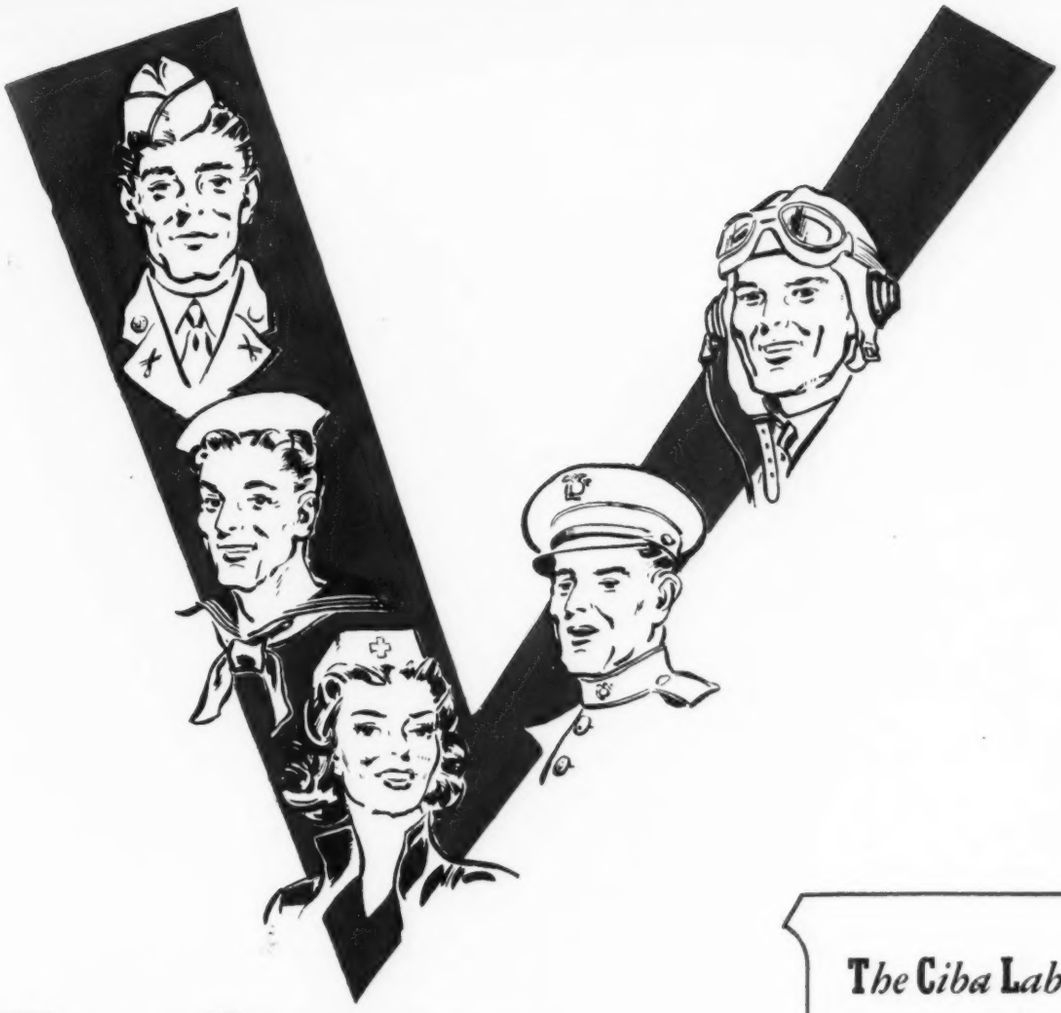
"Farther along the Thames, I saw more German submarines than I ever thought were in existence, lying alongside of one another. They had been captured in various ways by the British Navy. No report that I ever saw mentioned the capture of all those submarines.

"I am of the opinion that the British are doing the same thing today, but we will not know much about it until the end of the war."

* * * *

I hope you are right, Mr. Boys. Thank you for your letter!

HENRY G. LORD, *founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*



These Customers Must Come First!

In order to serve you best, Ciba Company, Inc., must first serve these defenders of yours and ours before anybody else.

So in this National Emergency, we bespeak your patience . . . we assure you that we will do our best in meeting your requirements . . . we join in the hope and conviction that the united efforts of all of us will speed the return of peace.

The Ciba Laboratory
EXISTS TO SERVE YOU

Today, and in the days ahead, when circumstances may force a change from regular routine, Ciba Chemists, Colorists and Service Technicians are ready to cooperate with you to solve your problems. Please feel free to call upon them at any time.

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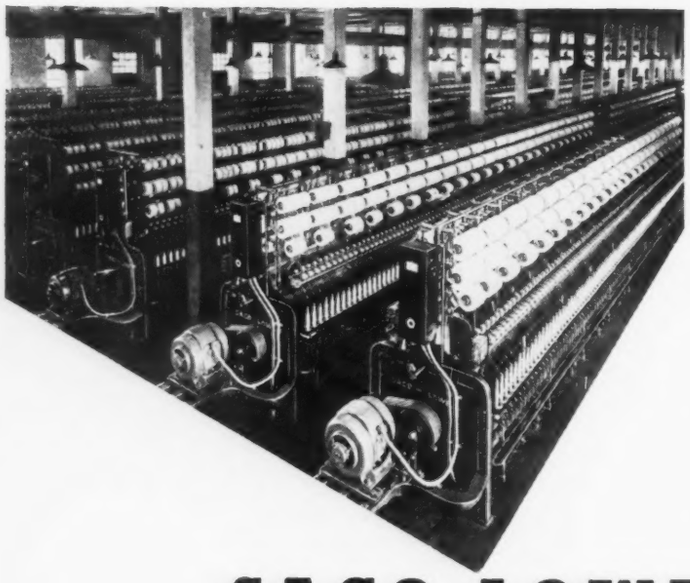
BLUEPRINTS TODAY

Will Save Time and Safeguard Future Profits



In this emergency normal replacements must wait . . . but the preliminary studies, plans and specifications for new and better equipment which will be urgently needed later should be started without delay. It is not too soon to "blueprint" your future requirements and to prepare for improvements which will be essential to your security with the return of a revived competitive market. Farsighted planning to replace equipment which has become inefficient and costly to operate and maintain will save valuable time and safeguard future profits.

Our engineers are anxious to keep you in close touch with improvements in methods and equipment . . . and to show you how these new developments can be incorporated in your plans for the future.

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★ For the BIGGEST JOB in History—

Calco Dyes Are Better Buys

Calco

The needs of our armed forces must be met fast, in unprecedented quantities—and without fail.

The change-over raises a thousand pressing problems. How to adapt present equipment? What materials are needed most, and quickest? How to meet these pressing needs in the face of a growing scarcity of many essentials?

Because of our long experience with government needs and specifications, Calco is in a particularly favorable position to advise you on all matters relating to color work on Government contracts. With many other problems, too, our long experience with the chemistry of color can prove a practical aid.

Your Calco representative, and our Technical Service Department are at your service to help in overcoming your own particular difficulties.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

Boston • Philadelphia • Providence • New York • Charlotte • Chicago

"Our country! May she always be in the right; but our country, right or wrong!" (Stephen Decatur-1816)

First We have a little job of work to do—

and then—

WHITIN TEXTILE EQUIPMENT

COTTON MACHINERY

Cleaning	Sliver Lap Machines	Spoolers
Opening	Ribbon Lap Machines	Twisters
Conveying	Combing Machines	Reels
Distributing	Drawing Frames	Quillers
Picking	Roving Frames	Automatic Bobbin Winders
Return Air Condensers	Spinning Frames	Whitin Long Draft
Revolving Flat Cards	Himalaya	Systems
	Yarn Attachments	

SILK and RAYON MACHINERY

Roving Frames	Cap, Spool and Pot Rayon	Ring Twisters
Automatic Bobbin Winders	Spinners	Rayon Reels
Upstroke Rayon Twisters		Warp Knitting Machines
Downstroke Twisters	Staple Cutters	Staple Rayon Machinery

WOOLEN MACHINERY

Rag Pickers	Ceiling Condensers	Woolen Cards
Mixing Pickers	Card Feeds	Tape Condensers
Tandem Feeders	Metallic Breasts	Scotch Intermediate
Automatic Stock Conveyors	Garnets	Feeds
Automatic Feeders	Fancy Twisters	Wool Spinning Frames
Flake and Nub Yarn	Dresser Reels	Twisters
Attachments for Cards		Automatic Bobbin Winders

WORSTED MACHINERY

Dandy Roving Frames	Cap Spinning, Bradford System
Cone Rovers	Ring Spinning, Bradford System
Cone Reducers	Flyer Spinning, Bradford System
Ring Twisters	Ring Spinning, French System
Cap Twisters	Changeovers, Cap to Ring or Flyer to Ring
Intersecting Gill Boxes	Automatic Bobbin Winders

ASBESTOS MACHINERY

Mixing Pickers	Breaker and Finisher	Condensers
Automatic Card Feeds	Full Roller Cards	Spinning Frames
Camel Back Feeds	Derby Doublers	Ring Twisters
Willows	Flyer Twisters	

6 WAYS BETTER!

Test after test and actual use prove Armstrong's Accotex Aprons are superior to ordinary aprons

HERE ARE SIX BIG REASONS why you'll save time, trouble, and money when you switch to Armstrong's Accotex Aprons . . . why 325,000 spinning and roving frame spindles are equipped with these efficient aprons:

1 SEAMLESS: Accotex Aprons have no troublesome seams to break open and shorten life.

2 NONSTRETCHING: Accotex Aprons are reinforced with a sturdy interliner . . . assuring no loss of efficiency due to stretching during operation.

3 UNIFORM: All Accotex Aprons have the identical composition, and the dimensions of every size are absolutely accurate. Thus, barring unusual mill accidents, each apron will give consistently good service for the same length of time.

4 CLEAN RUNNING: Accotex Aprons give you cleaner running work, reduce waste to a minimum . . . because they don't crack or scuff during operation.

5 REDUCED LAPPING: Accotex Aprons are not affected by changing temperatures or humidities. Hence they perform with a minimum of lapping.

6 GOOD FRICTION: The good friction surface of Accotex Aprons keeps slippage at a minimum. Thus you'll get maximum production of a high quality yarn.

Armstrong's Accotex Aprons were perfected after years of specialized research, laboratory testing, and constant field checking. They're made of a special compound which is both nonoxidizing and highly oil-resistant, and reinforced with a sturdy interliner. Many of the Accotex Aprons now in use have given from 18 months' to two years' service and show very little evidence of wear. There's every indication that they will continue to give satisfactory service for a substantially longer period.

See your Armstrong representative for the complete story on Accotex Aprons. Or write Armstrong Cork Company, Industrial Division, Textile Products Section, 927 Arch St., Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX APRONS

CORK COTS **ACCOTEX COTS**

ACME *Steelstrap*

MAKES DEFENSE AND OTHER SHIPMENTS "BOUND TO GET THERE"

SWIFTLY – SAFELY – ECONOMICALLY

Helping government authorities and industry deliver vital defense products safely and economically is a task which has been accepted by Acme Steel Company.

The scientific application of Acme Steelstrap simplifies and speeds-up the packing, handling and shipping of the products of every American industry.

Damage and pilferage losses are eliminated —costs are reduced for all types of packs . . . from parcel post to carload ladings . . . bales and boxes, crates and cartons, skids, etc.

Acme Steelstrap Meets All Federal Strapping Specifications

ACME STEEL COMPANY 2838 ARCHER AVENUE, CHICAGO, ILLINOIS

Still More Answers to WHO IS DOING WHAT *with*

AN ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE for A-C. CIRCUITS

RELIANCE V★S DRIVE

Speed Ranges up to 16 to 1
Sizes — 1 to 30 hp.

1 SPEED CONTROL CONVENIENCE WITHOUT LIMITATIONS. Place speed-changer and start-stop button at any convenient point to which a wire can be run. Control is within easy reach.

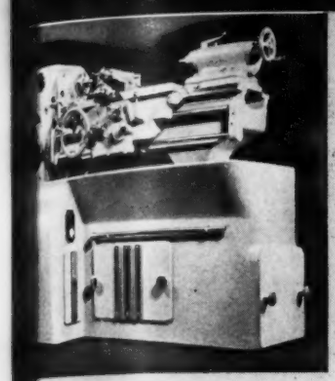
2 DIRECT DRIVE. Lower cost, because fewer parts (no intermediate speed-changing device). Power is closer to where it is needed. Use less space. Streamline your machine design.

3 FROM A-C. POWER SUPPLY. The "packaged" V★S Speed Control Unit brings you important advantages at a new low price. Mount it anywhere. Simply connect it by three wires to a 3-phase a-c. circuit.

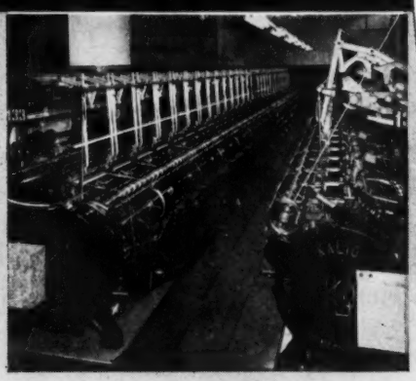
Other Production Aids: Quick stopping, reversing, speed-setting, safe speeds for threading, ample starting torque with smooth acceleration.

Get Bulletin 310 for details

RELIANCE ELECTRIC & ENGINEERING CO.
1082 IVANHOE ROAD • • CLEVELAND, OHIO
Sales Offices in Principal Cities

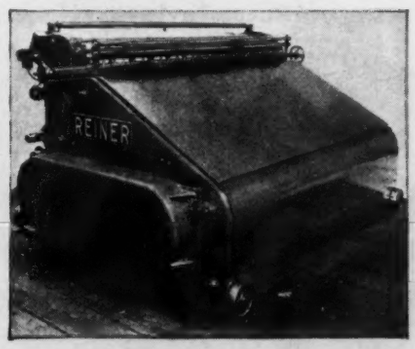


OL ROOM LATHE—A ma-ne-tool maker designed a new inch all-electric precision lathe h all elements of the Reliance S Drive built in as integral ts of the machine. Provides a oth range of spindle speeds n 5 to 2500 r.p.m. indicated by agnetic type tachometer on t of lathe headstock.

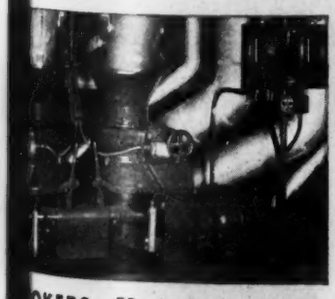


HOSIERY MACHINE—The Reliance V★S Drive for this full-fashioned hosiery machine is arranged for "program" control. Separate speed control handles are set to suit five different operations; speeds change automatically as each operation is finished.

IL WINDER—A producer of minum foil gets smooth eleration from a low threading ed to the top operating speed h a 5 hp. 148-1150 r. p. m. iance V★S Drive. Fewer aks when winding mean more duction.

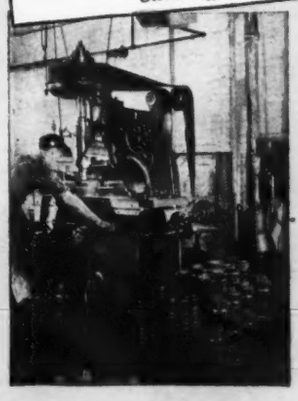


BEAMING MACHINE—A textile machinery builder made use of the V★S Drive to design a beamer on an entirely new principle. All elements of the Drive are enclosed within the machine. Provides stepless speed range from 50 to 1000 yards a minute; slow starting speeds; quick stopping.

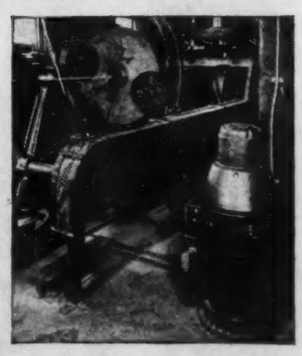


OKERS—V★S Drives are dily combined with instruments regulating temperatures d pressures so that speeds nge automatically. The drives these coal feeders change their e as required to keep steam sure constant.

BODY-CHASSIS ASSEMBLY—An automobile plant synchronizes the travel of body and chassis assembly lines by using Reliance V★S Drives. An operator, seated where the lines join, speeds up or slows down the overhead body conveyor so that the body can be dropped into place on the chassis.



MILLING MACHINE—A machinery builder put new life into an old milling machine by applying a 7½ hp. V★S Drive. With more power, a wider range of milling speeds and more convenient control the machine has become a bigger producer.



CABLE FORMING and WRAPPING—A V★S Drive replaced the system of gears and pinions formerly used to obtain speed changes for the taping head on this cable-forming and wrapping machine. Now, no time is lost in changing speeds. Product is more uniform.

RELIANCE ELECTRIC & ENGINEERING CO. • 1088 Ivanhoe Road, Cleveland, Ohio

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RELIANCE A-C D-C MOTORS

GLOBE DYES FOR DEFENSE AND FOR CIVILIAN PRODUCTION

Globe's extensive dyeing equipment is placed unreservedly at the call of the nation.

Many accessories of military equipment are made from yarns dyed by Globe—bindings, webbing and tapes, knitting yarns, in khaki and blue for the army, navy and marines.

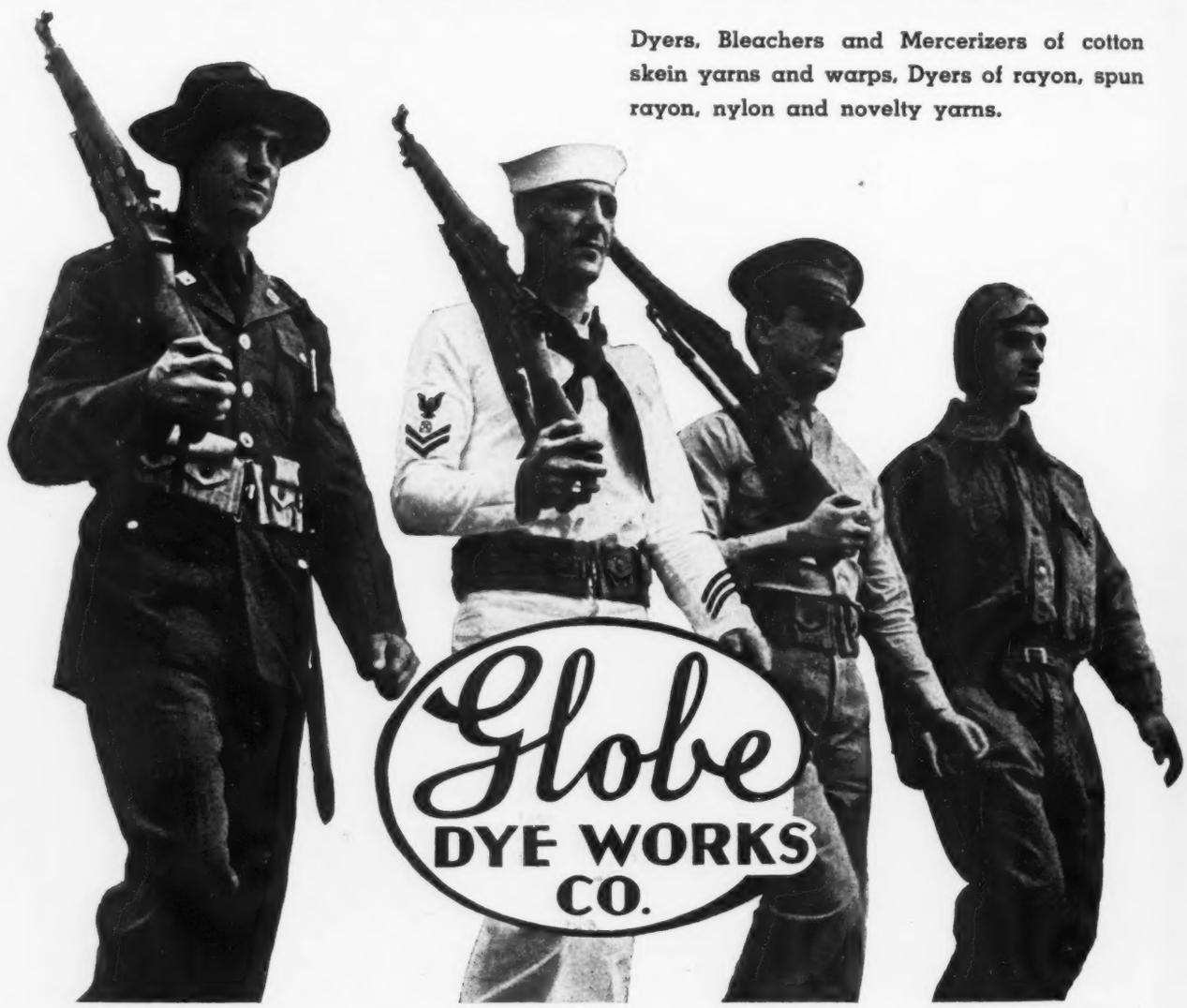
Yet there is room and to spare for adequate service to Globe's civilian customers.

And back of us is the whole chemical industry of the country, prepared to see that there is no vital shortage of dyestuffs to keep civilian wear as colorful as ever.

To the limit of our ability

YOU CAN RELY ON GLOBE

Dyers, Bleachers and Mercerizers of cotton skein yarns and warps. Dyers of rayon, spun rayon, nylon and novelty yarns.



FRANKFORD, PHILADELPHIA, PA.

Production . . .

Day and night BWH is producing mechanical rubber goods. Thru our distributors many of these products reach factories running largely on defense work — as well as army cantonments, naval stations and Government flying fields.

Because of national defense requirements our stock of mechanical rubber goods may not be as complete as in normal times. Faced with emergency demands, we naturally cannot replenish our stock as promptly as formerly.

We ask our customers to bear with us and to be confident that we are trying in every conceivable way to produce their requirements as rapidly as possible.

We naturally regret losing business as much as you do . . . because volume business means ideal operating conditions . . . and because we consider our customers as our most valuable assets.

Production battles are not won by factories or machines alone. They are won by morale . . . by the courage and spirit of both workers and management to get things done. Customers' morale helps, too.

BOSTON WOVEN HOSE AND RUBBER COMPANY

WORKS: CAMBRIDGE, MASS., U. S. A. ★ P. O. BOX 1071, BOSTON, MASS., U. S. A.

How to Dampen Vibration on High-Speed Spinning Frames

THE "CORRECT" ANSWER TO A VITAL PROBLEM IN DEPENDABLE TEXTILE PRODUCTION:

Problem: Spindle vibration may result from several causes such as unbalanced packages, increased bolster clearances, poor tape splice and improper tape tension. When vibration is not adequately dampened, it results in excessive loss of power, wear, increased oil fog and leakage. That's why one of the chief problems of textile mill lubrication is to dampen vibration on high-speed spindles.

Answer: Gargoyle Velocite Oils were created to solve this problem. These oils bond so intimately with metal that their strong lubricating films resist rupture and effectively dampen vibration—even under the shock of impact loads.

Because of their unusual lubricity and stability, these oils help minimize starting torque and running friction. This has resulted in substantial power savings. And since the strong, tenacious films of Velocite Oils resist rupture under vibration loads, they minimize wear and maintenance costs.

TO HELP MAINTAIN CAPACITY PRODUCTION, CALL IN

SOCONY-VACUUM for "Correct Lubrication"

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC. — Standard Oil of N. Y. Div. — White Star Div. Lubrite Div. — Chicago Div. — White Eagle Div. — Wadhams Div. — Southeastern Div. (Baltimore) — Magnolia Petroleum Company — General Petroleum Corporation of Calif.

ACTUAL USE of Gargoyle Velocite Oils by one large mill for more than 2 years showed 10% power saving, a doubling of oil life and decreased bolster wear.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

★ IN PEACE OR WAR WE CAN HELP YOU

THE same facilities which made these civilian fabrics possible can help your defense production. Our unequalled yarn dyeing capacity, our large stock of natural yarn and adequate winding and twisting equipment assure prompt deliveries of standard or special constructions on any put-up.

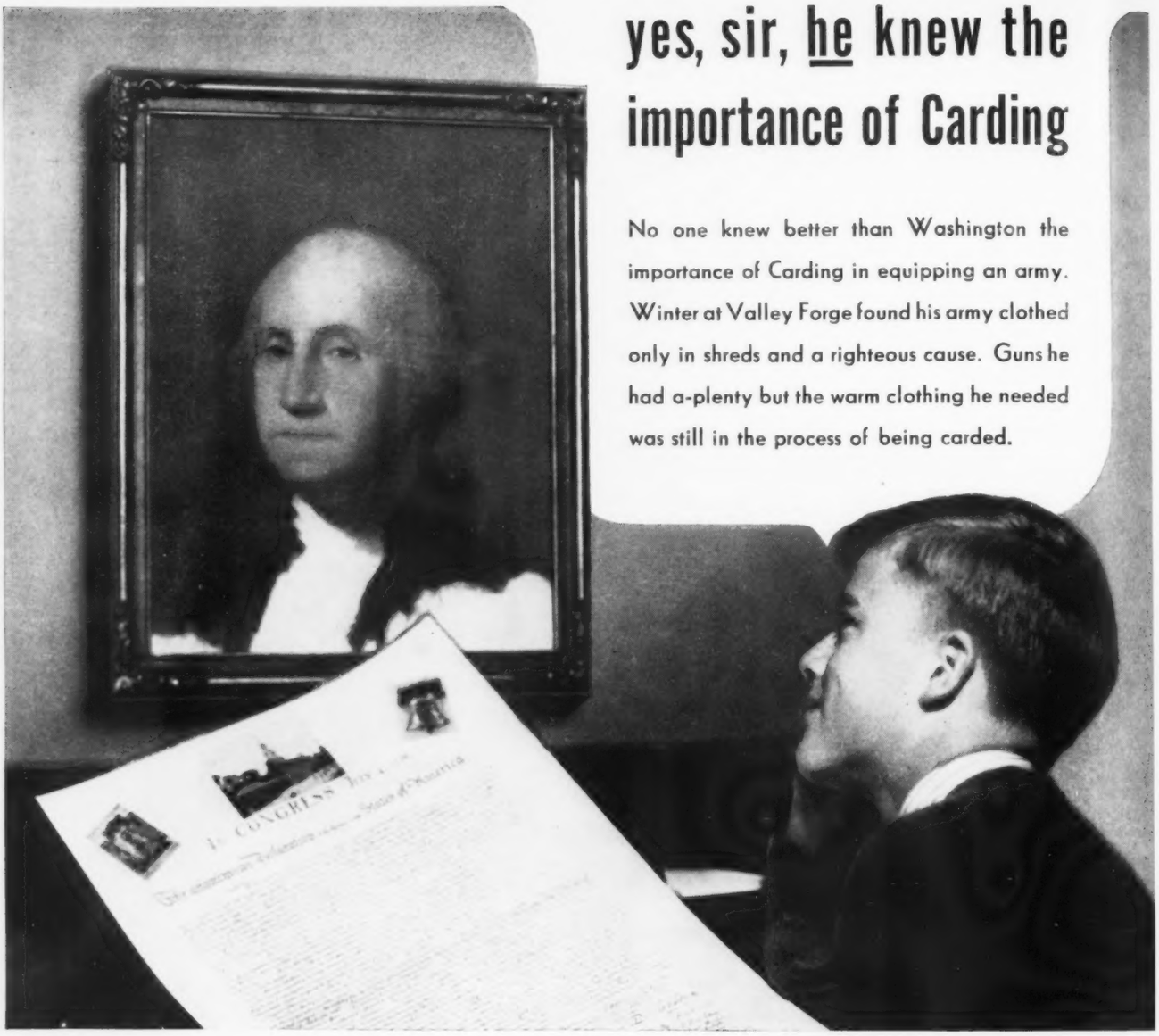
Our method eliminates waiting for yarns to be spun from dyed stock and permits quicker shade corrections and more accurate matching.

Bring your defense dyeing problems to us and hasten **VICTORY.**

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

★ Providence, Philadelphia, Greenville, Chattanooga; New York Rep., 40 Worth Street; Chicago Rep., 100 W. Monroe Street.



yes, sir, he knew the importance of Carding

No one knew better than Washington the importance of Carding in equipping an army. Winter at Valley Forge found his army clothed only in shreds and a righteous cause. Guns he had a-plenty but the warm clothing he needed was still in the process of being carded.

. . . and that wasn't all . . .

Hand cards still had to be made and the process was painfully slow. Almost overnight cardmaking became a doorstep occupation. Throughout the colonies the fingers of women and children were sore from cutting, bending and inserting wire into leather . . . all in a gigantic effort to step up carding production! ★ Today carding is no less important. From presidents to superintendents to overseers the search will be increasingly frantic to find *anything* to step up production.

★ We at Howard Bros. are proud to offer products we believe will deliver the ultimate in trouble-free, high-speed production . . . so essential for victory. Orders for card clothing made by the famous Tufferizing process are being filled as quickly as conditions permit. Check over your requirements and discuss them with our representative.

PRODUCTS

. . . Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye and Regular Wire Heddles

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

Step up production with **TUFFERIZED** **CARD CLOTHING**

Is your problem working capital?

DETERMINING the working capital necessary for a business is not a matter of complex accounting as we in this bank know —it can be done by just plain arithmetic.

What is sufficient working capital? It is the amount of money needed to finance a company's business turn-over. Let's take the cases of two business men — one a grocer, the other a clothing manufacturer. Each sells $300,000 worth of goods a year and has $30,000 of working capital. The grocer sells on a cash-and-carry basis, his inventory turns into cash every few weeks, so he has nothing tied up in receivables. Therefore, $30,000 is ample working capital for his business.

The clothing manufacturer has an entirely different problem. It is some three to four months from the time he buys his piece goods to the day the garments leave his factory. After that, since he sells on a long term, open-account basis and even in some cases gives dating, he must wait another 70 to 90 days before the receivables are converted into cash. In this case, $30,000 is not enough working capital margin to carry him through the period when his own cash is frozen in merchandise and receivables.

The grocer has no use for additional working funds. The clothing manufacturer has. He must find means of converting his current assets into cash. The Pennsylvania Company supplies that means. It may be on an unsecured credit basis—or against the pledge of receivables or inventory—or both methods. Whether the need is for $30,000, for less, or for many times that amount, The Pennsylvania Company is equipped to handle all forms of credit on a basis that will mean increased profits to you. Perhaps we can help you with your particular problem.

THE PENNSYLVANIA COMPANY

FOR INSURANCES ON LIVES AND GRANTING ANNUITIES

ONE OF AMERICA'S LEADING BANKS – FOUNDED 1812

Philadelphia, Pa.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION • FEDERAL RESERVE SYSTEM

RAYON... *the Industry that Came of Age to Serve our War-time Needs*

In 1918, the year World War I ended, the United States produced 5,800,000 pounds of Rayon; in 1941 over 570,000,000 pounds.

Volume tells only a small part of the marvelous story of Rayon, as it has developed from a crude substitute for silk, to the fiber that in its own right is constantly creating new styles and new values in textiles.

The uses of Rayon alone, or combined with other fibers, permeate the textile industry. Rayon has brought within the reach of all, fabrics of beauty and serviceability undreamed of a quarter century ago.

And Rayon ever keeps research at work to develop new uses, new services. Right now with silk imports shut off, technicians of the Rayon and hosiery industries are at work developing finer, more serviceable, full fashioned hosiery of Rayon—just one example of Rayon's ever expanding service.

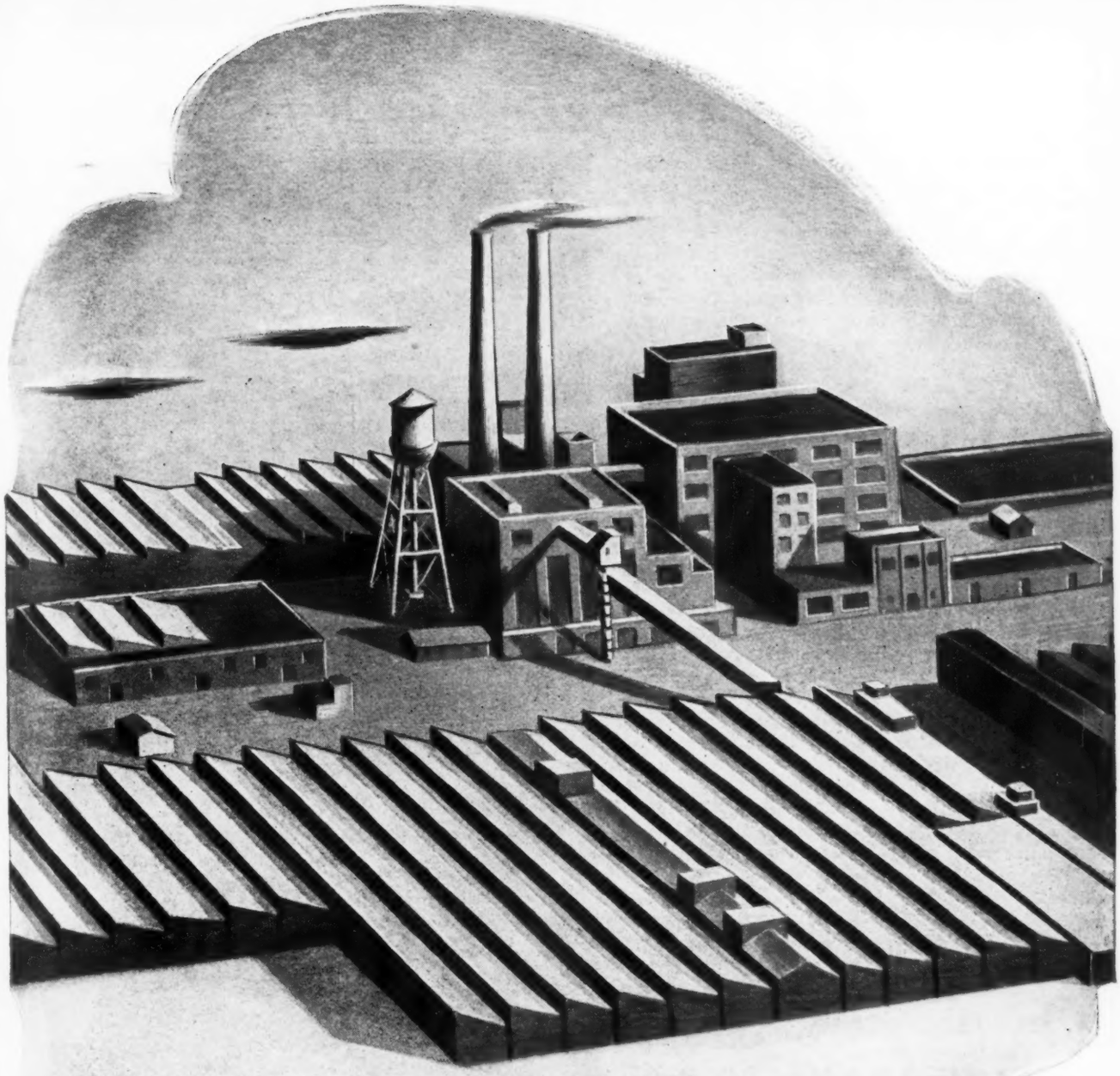
Tubize has played a very definite part in this dramatic story of Rayon. Manufacturing both acetate and viscose Rayon yarns and fabrics, it has developed modern, efficient plants, and a close-knit service organization; and Tubize has constantly put its shoulder to the wheel to forward the vast research that has done so much to advance the industry.

And Tubize, by consistent advertising and promotion, has built up in the minds of millions of women a realization that the Tubize Certified Quality Label on a garment is an assurance that the fabric has been tested and is certified for the service qualities that mean more now than ever.

TUBIZE CHATILLON CORPORATION

2 Park Avenue, New York

Acetate and Viscose Rayon Yarns and Fabrics



TUBIZE *certified quality* RAYON

P. S. Now when the service qualities are uppermost in the consumer's mind, this Tubize Certified Quality Label means more than ever as a merchandising help—it will pay you to take advantage of it in your own selling.

Scientific Control assures pe

Perfect Ring Lubrication—No Unthreading—Sm

TODAY the two important requirements in spinning, twisting and throwing all fibres—SPEED AND UNIFORMITY—take on new meaning. They have ALWAYS been important. Today as never before they are of VITAL importance! High speed production of fabrics takes its place as an essential in all-out war effort. Fabric production and quality depends upon YARN quality. Yarn quality (and quantity, too) be it silk, rayon, wool or cotton, depends in a great measure on design and uniformity of the RING TRAVELERS. You experienced textile men know this. And when you ALSO realize with what skill and infinite care and scientific control U. S. Ring Travelers are produced . . . you will understand why

U. S. Travelers are the perfect means of insuring perfect yarns to meet the stepped-up production program of today . . . and tomorrow

Shown here are examples of the Travelers we produce, many made to meet special requirements. Today, owing to increasing demand for U. S. Travelers, we are enlarging our shop 15%, adding some 6,000 square feet of floor space, installing more equipment. We were the pioneers in the development of what is now "standard practice" in first class ring traveler production . . . careful selection of metals, controlled hardening methods, accurate testing. But these essentials we have carried to a higher standard of perfection, which we genuinely believe unapproached in this field.

At every step in production you will find ingenious and special testing equipment that we have ourselves developed, that your Travelers may last longer and be absolutely uniform. We are constantly cooperating with mill men as to how to get better and longer service from their Travelers, sometimes finding that a slight change in methods or rings or Travelers will give them what they want, when improvement seemed most difficult.

Space forbids all the story. Do this—come and visit us; or write us; and learn what scientific control has really done to attain superiority for U. S. Ring Travelers.

U. S. RING TRAVELER CO.
PROVIDENCE **RHODE ISLAND**

AMOS. M. BOWEN, PRES. AND TREAS.

Sales Representatives:

NEW ENGLAND
Carl W. Smith, Herbert J. Smith — both c/o U. S. Ring Traveler Co., P. O. Box 1187, Providence, R. I.

SOUTHERN:
William P. Vaughan — P. O. Box 792 Greenville, S. C.
Oliver B. Land — P. O. Box 158 Athens, Georgia
Torrence L. Maynard — P. O. Box 456 Belmont, N. C.
William H. Rose — P. O. Box 792 Greenville, S. C.

MID ATLANTIC:
M. Lee Bolton
P.O. Box 7234
Philadelphia, Pa.

"The Travelers that KEEP GOING!".. **U·S·**

Ring TRAVELERS

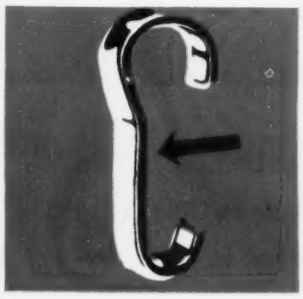
perfect TRAVELERS

Smooth, Even Yarn

Here are some of the scientific developments that have made "U. S." Ring Travelers the standard of the Textile Field

The NE-BOW

Developed by U. S. research to meet the several requirements resulting from the adoption of the Vertical Ring (particularly of the lubricating type). Notice the bend inward at the top of the horn. It is designed to prevent ends from flying out, while providing ample headroom for threading the yarn and for permitting full play of the Traveler to prevent binding on the ring. The alternative to the Ne-Bow is a shortened head, which makes threading difficult and causes binding.



PERFECT BALANCE

The "balanced" Ne-Bow U. S. Twister Traveler has its center of gravity about in the middle of the Traveler, with approximately as much weight on the open side as on the closed side. The straight shank (indicated by arrow) distributes the lubricant evenly over a wider area and also spreads wear. Thus you have less friction, longer wear and smooth running. This Traveler will NOT pivot away from the surface of the ring, an essential in preventing unthreading of ends due to excessive twist in silk and rayon yarns.

Did You Know That..

U. S. provides ingenious special tools for applying and removing Travelers. . . .

•

U. S. believes that Travelers will ride better if, under some circumstances, rings are made with a longer neck. . ..

•

Astonishingly better results can be obtained by some mills through a systematic schedule for replacing Travelers. . . .

•

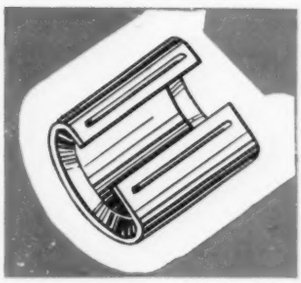
We once received a letter from a Chinese mill operator stating that careful count (!) had shown a shortage of 20 Travelers in a box containing some 15,000 microscopically sized Travelers. . . .

•

We are glad, on request, to bring along a stroboscope to any mill to help in study of the spinning operation. . . .

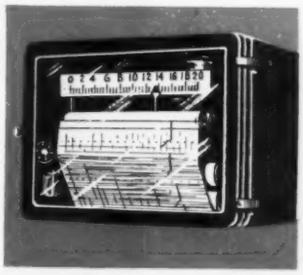
A RECORD

is kept of EVERY STEP in every production process of every shipment of U. S. Travelers. It appears in the number stamped on the sealed, protective U. S. Containers. Reference to that number (even 10 or 20 years hence!) is the key to a complete "case-history,' and insures *exact duplication* of your order, no matter how far back it goes. Just one example of U. S. scientific control.



BEVEL EDGE

U. S. Spinning Travelers are cut ACCURATELY to give correct weight and smooth points. Special equipment insures accurate inspection. The Bevel Edge is a feature that insures smooth even yarn—no "flat" ends to cause chafing, roughening, splitting or fly-waste. U. S. was a pioneer in the development of the Bevel Edge.



CONTROL

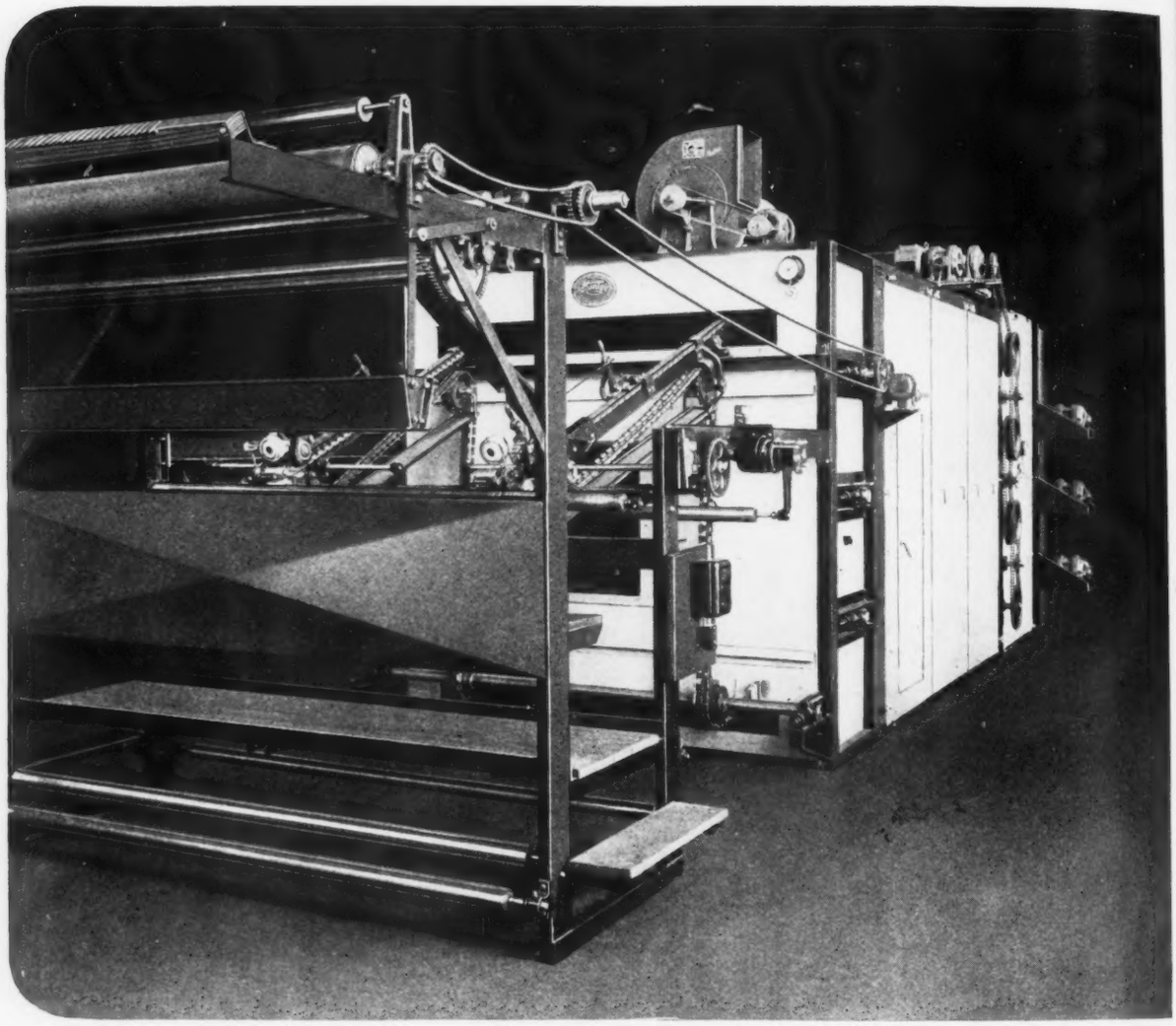
Unless metal is perfectly hardened it cannot give perfect service. Perfect hardening is essential in ring travelers. That means perfect furnace control. POTENTIOMETER CONTROL of furnaces is the order of the day in U. S. production . . . and it is paralleled by similar modern scientific control at all other steps in the production of these perfect ring travelers.

SOLD UNDER THESE TRADE NAMES

- Bowen Round Point Travelers
- Bowen Square Point Travelers
- Bowen Improved Vertical Bronze
- Bowen Pantented Bevel Edge
- Bowen Flat Oval and Round Wire Travelers
- Bowen Patented Ne-Bow Vertical
- Bowen Patented Vertical Offset

a TRAVELER *for every* FIBRE

This HUNTER



Hunter presents the new Uniflow return tenter—the latest addition to the long Hunter record of achievement in cloth drying—a record unequalled by any other tenter manufacturer.

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

JAMES HUNTER

NORTH ADAMS

SINCE 1847

TENTER dries:

14-OUNCE WORSTEDS AT 25 YARDS PER MINUTE, 16-OUNCE WOOLENS AT 35 YARDS PER MINUTE—AND DOES IT IN 12 LINEAL FEET FOR THE DRYING CHAMBER WITH ONE MAN'S LABOR

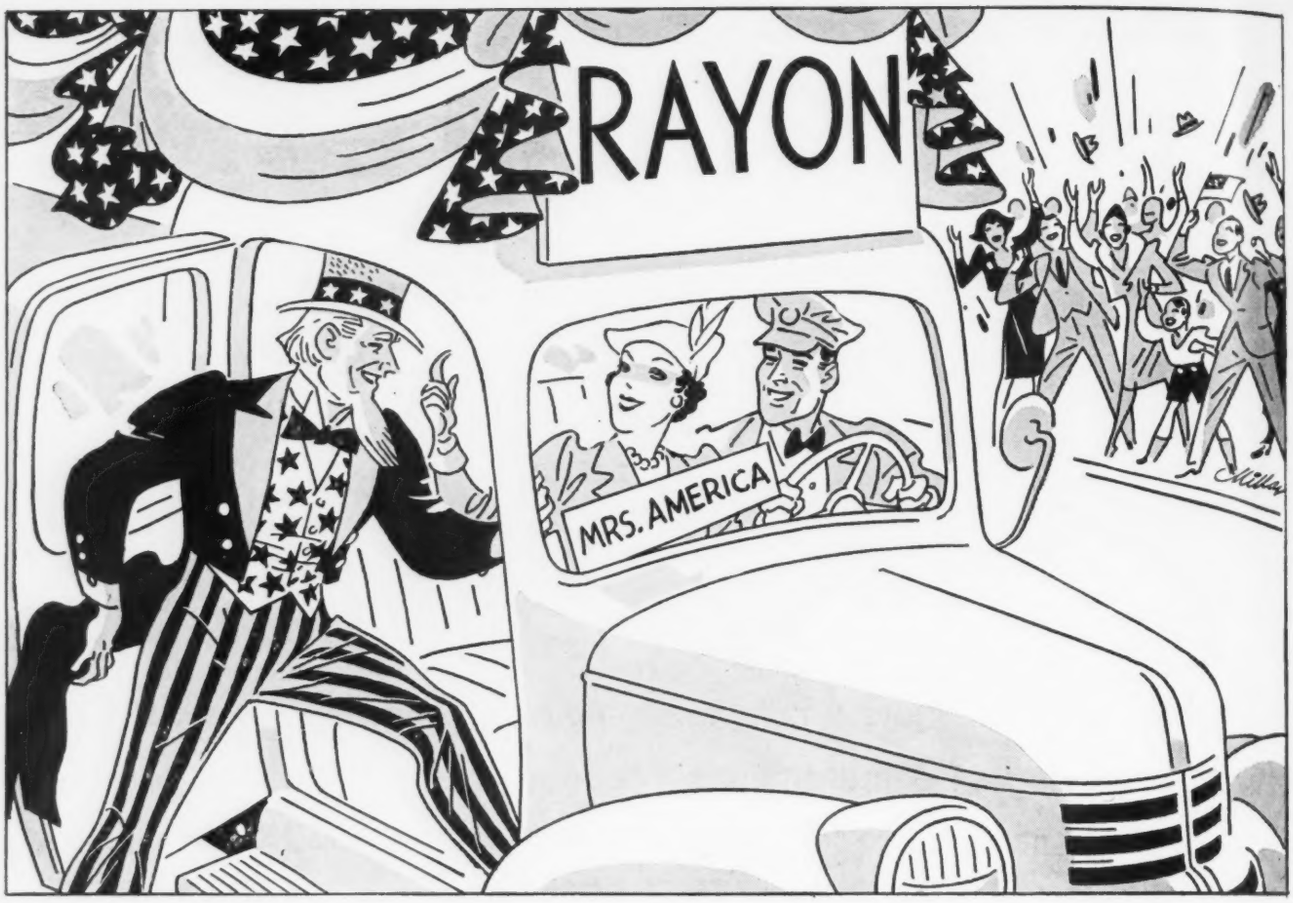
HUNTER now offers a completely new and radically different Cloth Tenter embodying an entirely new conception of air drying cloth with improved handle at high productive capacities. In the new Hunter Uniflow Tenter, drying times are reduced from 1.2 to 4 minutes, depending upon the weight of the fabric. Thus, your cloth is exposed to heat and air treatment but a fraction of the time usually required with subsequent gain in handle and quality.

The new unit is all metal and requires only one man's operation. It is equipped with every known device for automatic continuous operation, such as automatic guides, patented selvedge openers, temperature and humidity controls, recording devices and counters, remote control, tachometer, etc. There is a size for any productive requirement. For complete details write to

MACHINE COMPANY

MASSACHUSETTS

***Western Rep.*: E. G. Paules, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Calif.**



MOVE OVER, MRS. AMERICA

Move over, Mrs. America; gangway for Uncle Sam! It may be a bit crowded, and we won't be able to continue to devote all of our attention to you. To win this war we'll all have to share our interests and efforts with him.

You're going to have to share your rayon with Uncle Sam. He needs it for tires and cables, uniforms and insignia, and dozens of other military uses, increasing every day. He needs it to replace natural fibres that are being used for military supplies and to fill the gaps in other textile shortages that the war has caused.

Because the emphasis has changed, weavers have less rayon yarn for civilian needs and must, therefore, operate their mills with maximum efficiency.

Toward this objective, "Continuous Process" Spun-Lo Rayon is making an outstanding contribution.

"Continuous Process" Spun-Lo Rayon is spun, washed, bleached, dried and twisted as a single thread. As a result it has the utmost uniformity and is virtually free from knots and broken filaments. In terms of weaving mill operation these qualities mean faster running, fewer breaks, less loom stoppage and fewer seconds—all factors of vital importance in increasing mill efficiency.

"Continuous Process"

Spun-lo Rayon

Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION · CLEVELAND, OHIO

NEW YORK OFFICE • 500 FIFTH AVENUE

Complete Accuracy

in the knitting of fine hosiery can never be achieved by half-measures. It demands thorough, painstaking control over every factor that contributes to quality. Good needles, accurately made in every detail, contribute to good knitting. That is why so much of the world's outstanding hosiery is produced with the help of Torrington machine-made needles.

Spring Beard

TORRINGTON NEEDLES

SINKERS · DIVIDERS · SPLIT DIVIDERS

THERE is *no shortage of Torrington Needle Bearings* for priority applications . . . they can be delivered with the promptness you need to maintain your production schedules!

When the Needle Bearing was introduced eight years ago, design engineers in every field quickly recognized its unusual merits. Encouraged by the steadily rising sales that confirmed industry's growing acceptance of the Needle Bearing, Torrington began a program of plant expansion designed to permit wider utilization of the bearings' potentialities. With the beginning of defense activities, indications of still heavier demands provided the basis for further expansion, and today production is geared to meet the needs of the Victory program.

The Needle Bearing has already demonstrated its efficiency in countless industrial applications, where its small size, low cost, high capacity, ease of installation and lubrication have resulted in improvements in product design and operation, or reductions in manufacturing costs. And today there is a still more important reason for the use of the Needle Bearing—its *availability for prompt shipment* on rush orders.

Textile machinery manufacturers working on priority orders can eliminate one source of production delays by planning *now* to incorporate the Needle Bearing in their designs. Torrington engineers will be glad to work with equipment manufacturers in adapting the Needle Bearing's advantages to their specific problems. For full details write for Catalog No. 116.

NO SHORTAGE HERE!

THE TORRINGTON COMPANY
TORRINGTON, CONN., U. S. A. • *Estab. 1866*
Makers of Needle and Ball Bearings

New York · Boston · Philadelphia · Detroit
Cleveland · Chicago · Los Angeles · Seattle
San Francisco · Toronto · London, England

TORRINGTON NEEDLE BEARING

WHAT WILL YOU DO WITH IT?

Our laboratories can help you find the answers. The extensive scientific resources, the skilled staff and the creative interest that produced and perfected ARALAC are at the command of the entire textile industry. Our experts await only your invitation to explore the particular pathway of most concern to you.

In ARALAC fibre there are concealed a hundred possibilities as yet unrealized. For here, at last, is a new protein fibre possessing characteristics which permit it to stand beside such natural protein fibres as wool, alpaca, camel's hair and fur as a servant of man's comfort and well being. It promises new opportunities and new economies of far reaching importance, particularly in fields affected by wool shortages — and we who make it offer our complete cooperation to the end that these promises shall be fully realized.

*Trade Mark Reg. U. S. Patent Office

- **Blends with wool, mohair, rayon, cotton.**
- **Combines with felting furs.**
- **Creates distinctive new fabrics.**
- **Takes dyes beautifully.**
- **Already proving itself in commercial use.**
- **Chemically stabilized.**
- **AND CUTS COSTS.**

ARALAC, INC.

Taftville, Connecticut

ARALAC, produced by a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.

FLASH NEWS
FOR HOSIERY MANUFACTURERS

Announcing

AVCONIT NO. 1

. . a new special finish for rayon hosiery yarns

. . . means fewer irregulars, lower manufacturing costs

NOW, JUST IN TIME to help you switch over from silk to rayon, comes this new specially developed finish. A product of years of research in the laboratories of American Viscose Corporation, Avconit No. 1 has been thoroughly tested on a commercial scale. Nearly half a million dozen pairs of rayon hosiery have already been made with the aid of this new formula. Here are its advantages, as reported to us and confirmed by our own technicians:

1. *Holds required twist* in yarn during manufacturing—means fewer press-offs.
2. *Forms a clear stitch* on the knitting machine.
3. *Affords adequate lubrication* to protect the yarn during knitting.
4. *Easy to apply.*
5. *Not abrasive or corrosive* to metal machine parts.
6. *Protects the fabric* during handling in the greige—eliminates many snags and holes.
7. *Easy to remove* in scouring.
8. *Inexpensive.*

INTERESTED? Write today for complete information on Avconit No. 1. In order to insure prompt answer, please address inquiries to Sales Development Department, American Viscose Corporation, Marcus Hook, Pennsylvania.

CROWN TESTED AND APPROVED RAYON FABRIC

TRADE MARK REG. U.S. PAT. OFF.

AMERICAN VISCOSE CORPORATION

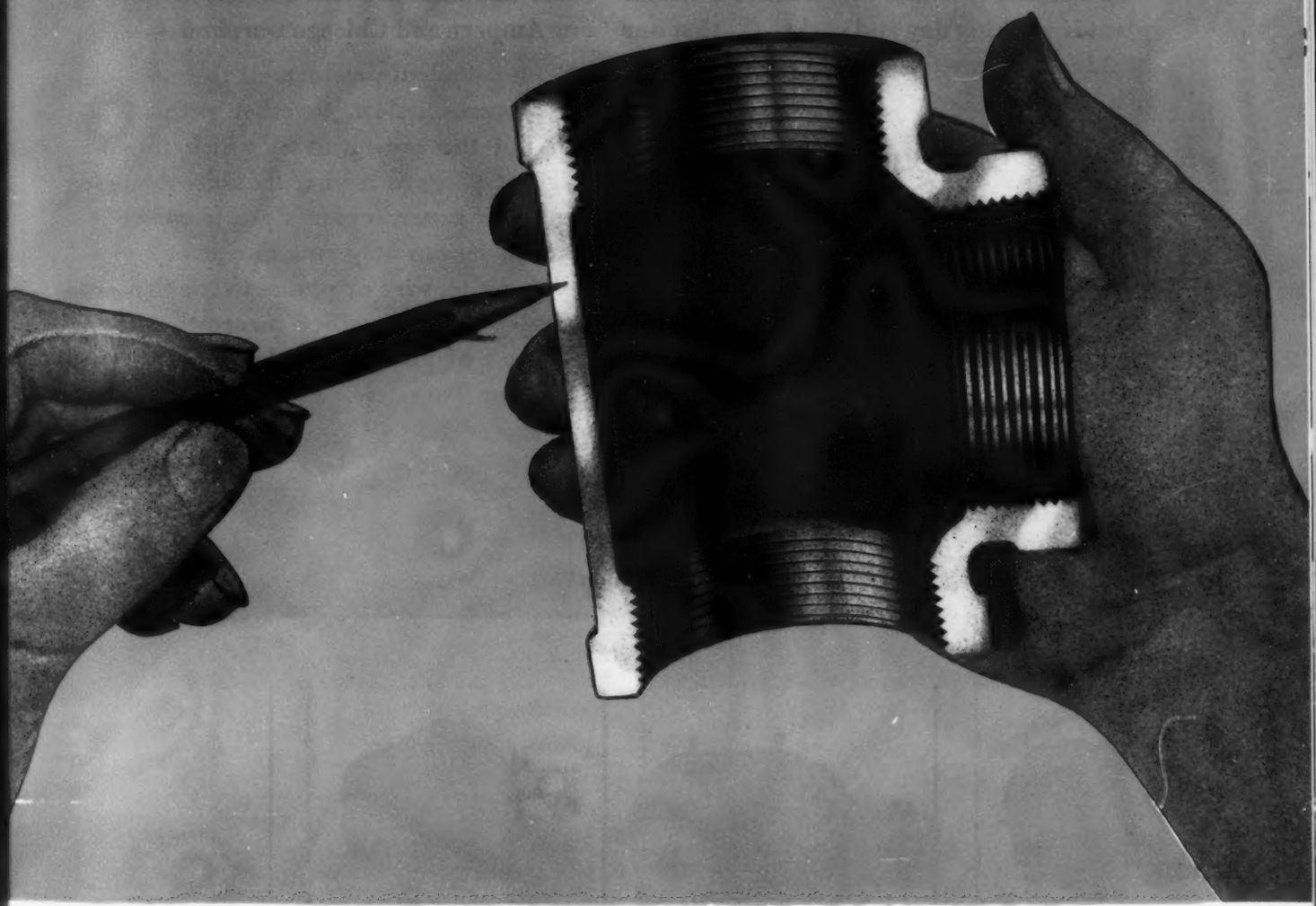
World's Largest Producer of Rayon Yarn

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

PLANTS AT: Marcus Hook, Pa.; Roanoke, Va.; Parkersburg, W. Va.; Lewistown, Pa.; Meadville, Pa.; Nitro, W. Va.; Front Royal, Va.

*T. M. Reg. Applied for

Finer-Grained Metal



makes these AIR-FURNACE MALLEABLE FITTINGS

20% STRONGER

OTHER PLUS FEATURES OF GRINNELL FITTINGS

- Controlled Annealing
- Tested Strength
- Smooth Cores
- Uniform Wall Thickness
- Precision Threads
- Accurate Chamfer

Less breakage during installation . . . extra safety in service . . . lasting protection against maintenance troubles . . . that's what you can expect from Grinnell Malleable Fittings, made exclusively from Air-Furnace metal.

A bonus of 20% in strength and uniformity is what you get when you insist on Grinnell Air-Furnace Malleable Fittings. They are available everywhere through wholesalers, heating and plumbing contractors and branch offices in all principal cities. Catalog "Grinnell Pipe Fittings" shows the complete line. Write for one. Grinnell Company, Inc., Executive offices, Providence, Rhode Island.

CAST IRON . . . AIR FURNACE MALLEABLE IRON . . . STEEL . . . BRONZE PIPE FITTINGS BY **GRINNELL**

WHENEVER **PIPING** IS INVOLVED

We are still

FOR MOTORS, GENERATORS, M/G SETS

While it is true that the Crocker-Wheeler plant is working day and night . . . . that our backlog is greater than at any time in the history of the Company . . . . that 90% of our output is for National Defense—*there is still some room at the end of our production line for more orders for our regular products.*

Naturally, the time required for shipment of these products is considerably longer than it was a year ago (except for certain sizes and types of small motors—50 hp. and below—and flexible couplings, some of which are still carried in stock in our Ampere and Chicago warehouses).

The principal products of the Company are pictured below, together with a summary of the capacities in which they are built. If you are having trouble obtaining motors or generators or flexible couplings, perhaps we can help you. For price and delivery, write, wire or phone to the Crocker-Wheeler district office nearest to you. (Because of priority regulations, shipping dates for Non-defense orders cannot be guaranteed.)

POLYPHASE INDUCTION MOTORS

¼ to 10,000 hp.—Squirrel-cage and slip-ring, for all standard ratings, speeds, voltages and frequencies—single and multispeed—open and enclosed. Squirrel-cage motors with normal or high starting torques, normal or low starting currents.

SYNCHRONOUS MOTORS

15 to 10,000 hp.—Engine-type and coupled-type for all standard ratings, speeds, voltages and frequencies. Motors with excess capacity for power-factor improvement are available.

DIRECT-CURRENT MOTORS

½ to 5,000 hp.—All standard ratings—constant, varying and adjustable speed—open and enclosed. Adjustable-speed motors for constant-horsepower, tapered-horsepower or constant-torque duty, for speed ranges up to 6:1.

POLYSPEED MOTORS

1 to 7½ hp.—Adjustable-speed motors for operation on alternating current—220, 440 or 550 volts, 3 phase, 60 cycle. Motors provide an infinite number of speeds.

FREE BOOKLET—CARE AND OPERATION OF INDUCTION MOTORS

Today, when motors are hard to get, and production must be kept moving at top speed, it is more important than ever before that you have no motor failures in your plant.

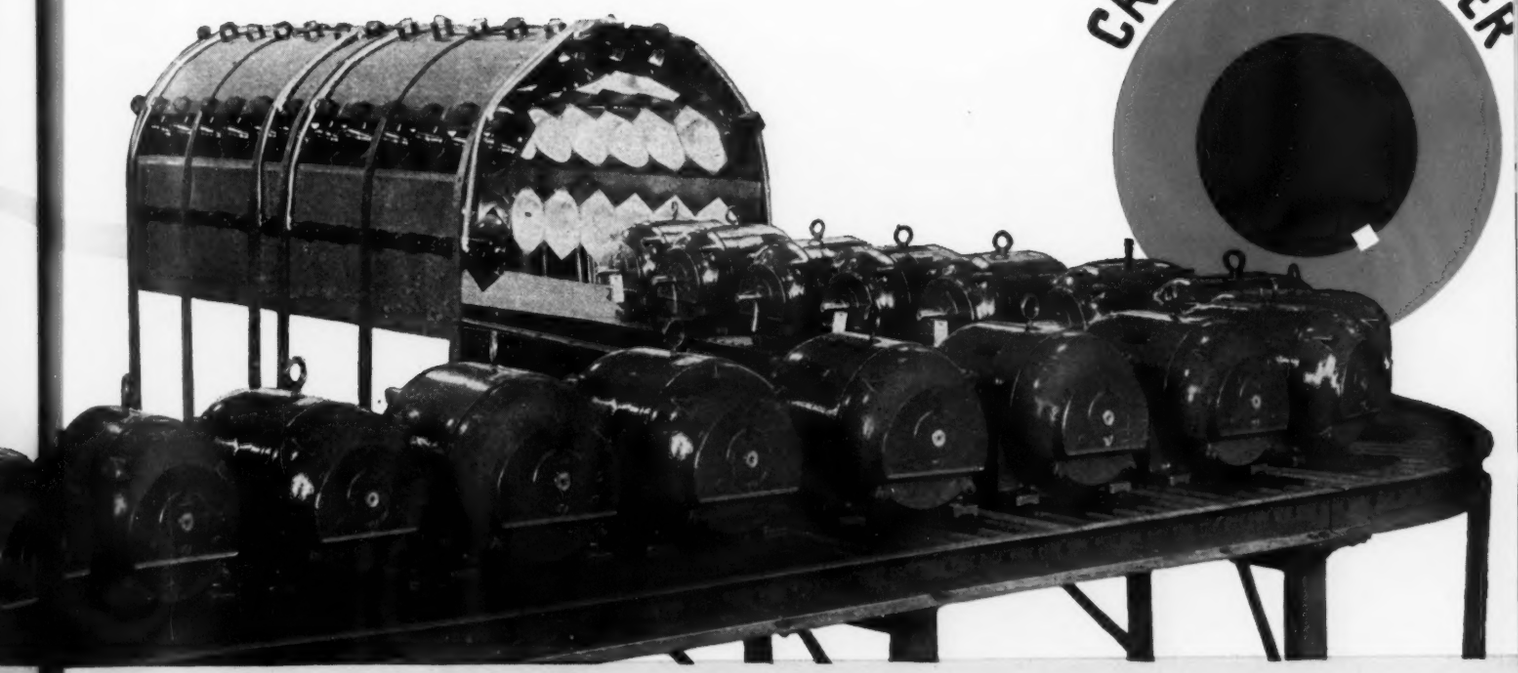
This little 12-page booklet gives helpful hints for keeping your induction motors on the job. Contents include: *Effects of Voltage Variation, Lubrication of Bearings, Drying-out, Cleaning, Heating, Troubles, etc.*

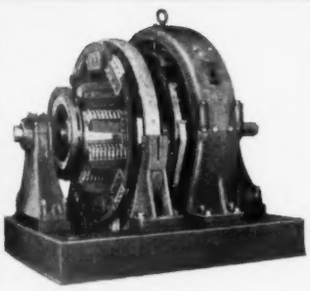
Write today, on your company letterhead, for your copy of *Instruction Book No. 501*. No charge—no obligation.

accepting orders...

AND FLEXIBLE COUPLINGS

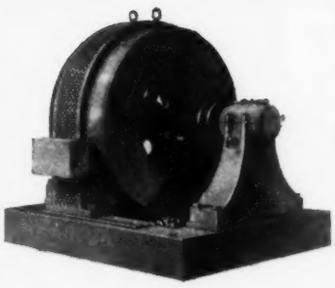
CROCKER-WHEELER





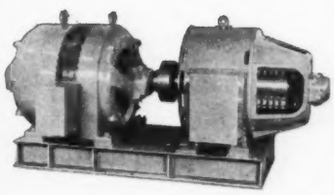
DIRECT-CURRENT GENERATORS

Up to 7,500 kw.—Belted, coupled and engine types for standard and special voltages. Three-wire generators with self-contained auxiliary windings in sizes above 40 kw.



ALTERNATING-CURRENT GENERATORS

Up to 10,000 kva.—Belted, coupled and engine types for use with steam, gas or oil engines—25 to 60 cycles—standard voltages to 13,200 volts.



MOTOR-GENERATOR SETS

Up to 7,500 kw.—With either an alternating-current motor (induction or synchronous) or a direct-current motor driving an alternating-current or direct-current generator.

COUPLINGS

For shaft diameters up to 5 inches—C-W flexible couplings were designed to provide maximum torsional resilience. They require no lubrication, possess great shock absorbing qualities, are easily installed and have an extremely long life.

CROCKER-WHEELER

CROCKER-WHEELER ELECTRIC MANUFACTURING COMPANY • AMPERE, N. J.

DISTRICT SALES OFFICES

Boston, Mass.	Cincinnati, Ohio	Newark, N. J.	Pittsburgh, Pa.
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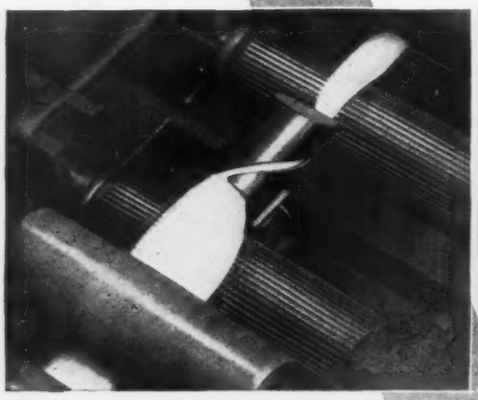
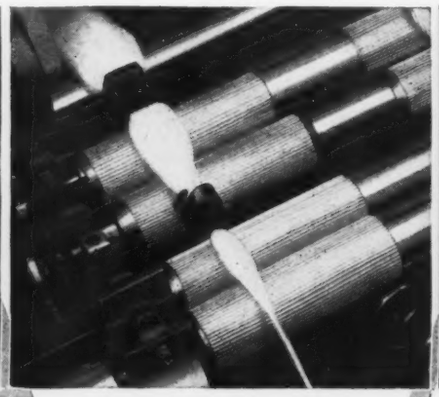
In Canada: Commonwealth Electric Corporation, Limited, Welland, Ontario

Victory Requires

✓ INCREASED PRODUCTION
✓ CONSERVATION OF RESOURCES
✓ LOW OPERATING COSTS



5-Roll High-Draft Roving System with Patented Scroll Condenser



4-Roll High-Draft Roving System with Patented Scroll Condenser

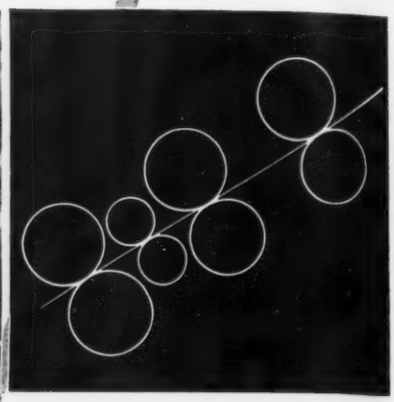


Diagram of 4 Roll High-Draft Spinning

How H & B High-Draft Roving and Spinning Can Help you Attain All Three Objectives

INCREASED PRODUCTION. If you can't get new machinery you can greatly increase the efficiency of your old conventional roving and spinning frames by equipping them for H & B High-Draft Roving and H & B Four Roll High-Draft Spinning. These two systems are adaptable to any standard make of frame. The cost of changing over is surprisingly low, because of the simplicity of design.

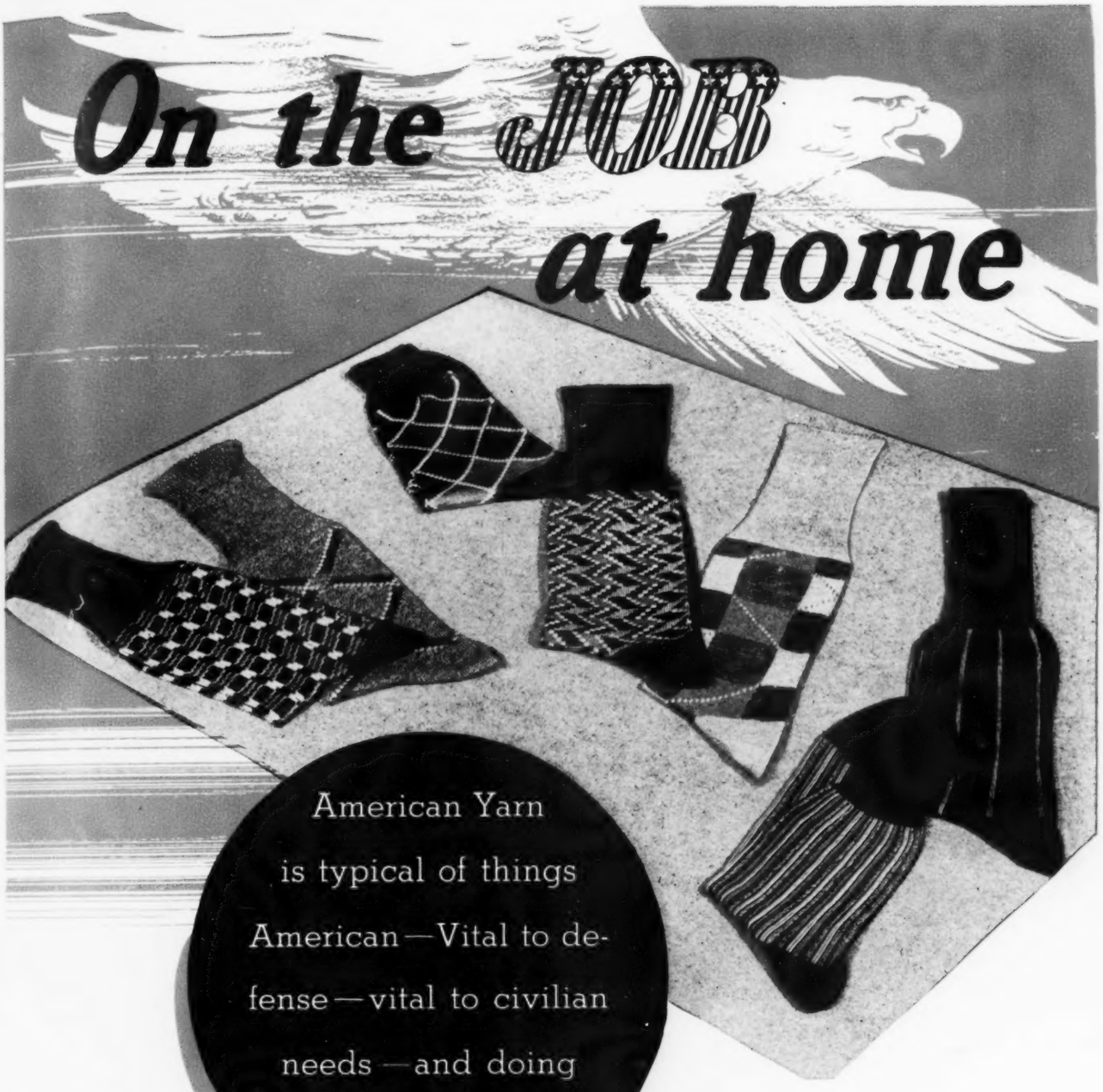
CONSERVATION. Important savings in power can be made by changing over to H & B High-Draft Roving and Spinning, because of the great reduction in spindles required for a given production.

LOW OPERATING COST. The simplicity of both systems contributes to low maintenance and upkeep as well as low production costs. Having no belts, they are easy to clean, easy to operate and readily adjusted.

H & B AMERICAN MACHINE COMPANY
Textile Mill Machinery
PLANT AT PAWTUCKET, R. I.

BOSTON OFFICE . . . . 161 Devonshire Street
ATLANTA OFFICE
815 Citizens & Southern National Bank Building
CHARLOTTE OFFICE • 1201-3 Johnston Building
EXPORT DEPARTMENT
United State Machinery Company,
115 Broad Street, New York, U. S. A.

On the JOB at home



American Yarn is typical of things American—Vital to defense—vital to civilian needs—and doing both jobs *well.*

SUPER-MERCERIZED

Durene

1. MUST BE MADE OF COMBED YARN
2. MUST BE WARP MERCERIZED
3. MUST BE A PLY YARN

AMERICAN

YARN AND PROCESSING COMPANY

MOUNT HOLLY N. CAROLINA

Special Representative: E. F. REDDING, MOUNT HOLLY, N. C.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

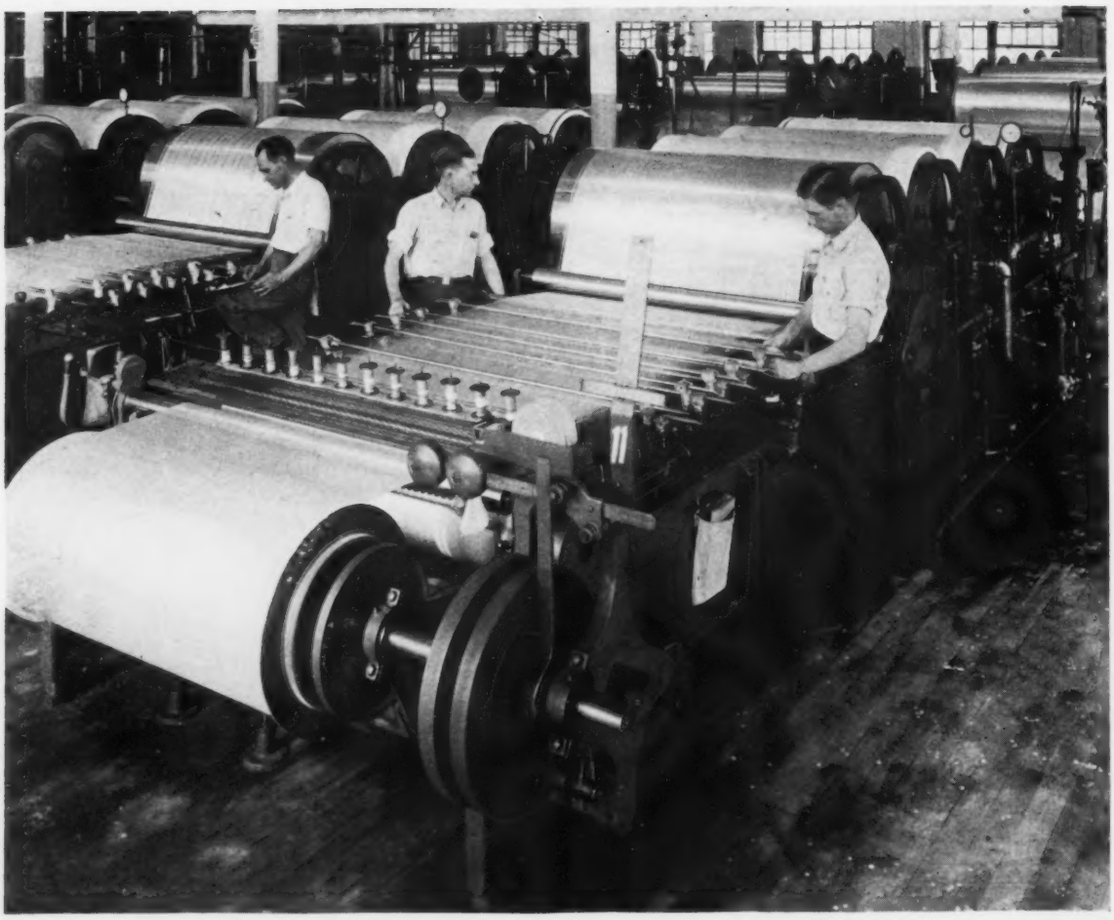
CHATTANOOGA, TENN.
Mr. Tom Moore
735 Chestnut Street

HIGH POINT, N. C.
Mr. E. J. Holbrook

NEW YORK, N. Y.
Schoolfield & Co., Inc.
40 Worth Street

PHILADELPHIA, PA.
Roland Swallow
Schoolfield & Company
3701 N. Broad St.

CHARLOTTE, N. C.
Cosby & Thomas



Have the BEST Slasher — and Keep It at Top Efficiency

Our duty to the nation at war is to see that Johnson sizers are available to those who need them in manufacturing for the "Victory Program". Also, to keep sizers efficient, we will supply repair parts, to the extent of our ability to deliver them, to mills engaged in both defense and civilian production.

But in ordering from us, remember the greater part of our productive facilities will be engaged in defense work.
This is no time to put up with half efficient slashing equipment. Because they are built by specialists in sizing equipment, **Johnson Rayon Warp Sizers** are the most efficient sizers made today, and play a leading role in the battle of production.

Be prepared now, for whatever production load may come your way, with efficient Johnson slashers.

Charles B. Johnson Machine Works

Paterson, New Jersey

AS THE COIL of the first Atlantic cable stretched its history-making course through the depths of the ocean between America and Europe, it became not only a physical bond between the continents, but a symbol, as well, of unprecedented progress to benefit the trade of the world. That the Atlantic cable achieved this in the cause of commerce is now living history.

UNITY...HALL-MARK OF GREATNESS IN ENTERPRISE

"AWAITING THE REPLY." PAINTING BY ROBERT DUDLEY. REPRODUCED BY COURTESY OF THE METROPOLITAN MUSEUM OF A

Similarly, to broaden the scope of their endeavors with benefit to those they serve, the Niagara Alkali Company and the Electro Bleaching Gas Company have united the strong strands of their enterprises to become one...the Niagara Alkali Company. The quality reputation of all products...the fine traditions of management...will continue to distinguish this greater American business in the field of chemicals.

Niagara
ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

EBG NIAGARA ALKALI COMPANY

"It gives me pleasure to advise you that your organization has been chosen to receive the flag of the Bureau of Ordnance and the Navy 'E' pennant in recognition of your outstanding efforts in the production of ordnance materiel vital to our national defense. Recent events have made this award of even deeper significance than any which have been made in the past."

Secretary of the Navy Frank Knox, in a letter to Monsanto.

"E" stands for teamwork!

Among the crews of Uncle Sam's warships and naval planes, the Navy "E" is one of the most coveted and respected honors the men of a single gun turret or an entire battleship can win.

It is a symbol, not of individual brilliance, but of championship teamwork . . . teamwork that only long, gruelling hours of actual practice could perfect.

The same tradition governs the award of a Navy "E" to an industrial plant.

The "outstanding jobs" which win an Ordnance Bureau flag and "E" pennant are not the work of one brilliant "lone wolf" in the research department—or a single, capable executive. They are the result of teamwork that only starts with the quarterback in the front office and includes every man in the organization to the policeman on the plant gate . . . teamwork that only long years in the peacetime service of industry could perfect to the peak of efficiency demanded by a nation at war!

Monsanto is proud to fly the Navy "E" in recognition of past performance . . . glad to accept the responsibility it imposes for future performance. MONSANTO CHEMICAL COMPANY, ST. LOUIS, MISSOURI.

* * *

The Naval Ordnance flag and coveted "E" pennant were awarded specifically to the general staff of Monsanto's Phosphate Division and the division's plants at Anniston, Alabama, and Monsanto, Tenn.

MONSANTO CHEMICALS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

CURRENT efforts of brain and brawn, man and machine will determine how far today's concerns will go *tomorrow*. To manufacturers now "on their mettle" to meet the challenge of future merchandising needs, Hinde & Dauch offers the facilities of the Package Laboratory. Just as H & D's 25 mills and factories are now working full time to produce shipping boxes for hundreds of items, from shells to shoes, H & D's Package Engineers are ready to "deliver" for manufacturers seeking authoritative packaging recommendations and services.

New standards of simplicity, effectiveness, economy, practicality are continually being established as H & D Package Engineers work full time on corrugated package development. Perhaps the adaption of one or more of these corrugated achievements will save you dollars today, as well as precious time tomorrow.

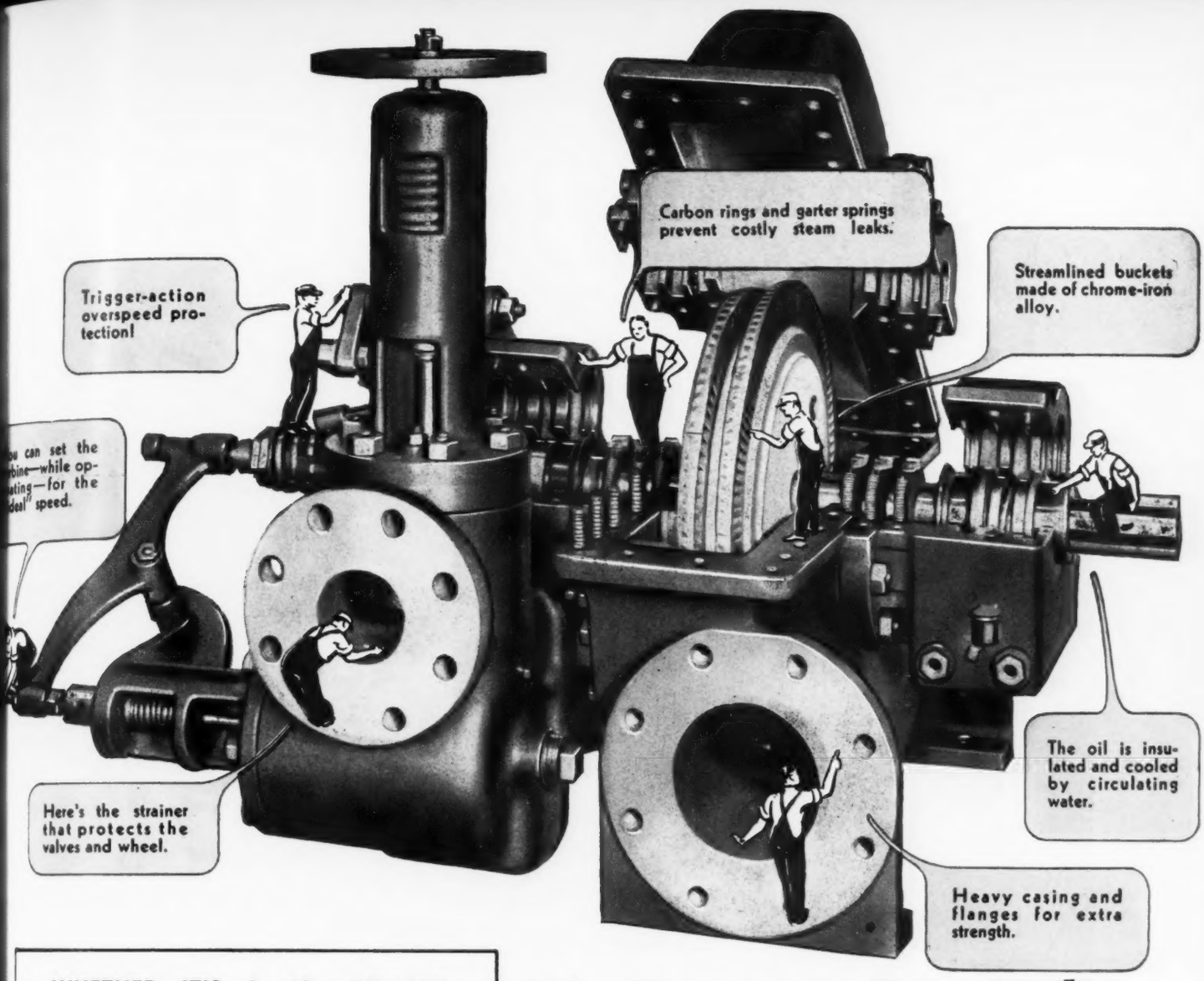
These services include the study of your product, your market, your complete packaging program; the development of corrugated packages to meet the situation squarely; the preparation of packages which are more simple, more economical, more effective . . . depending upon your objective. H & D can perfect the packages you need to complete tomorrow's merchandising program so that it can be "stored" as a unit, ready to roll when business gets the signal to go ahead. Write us today. There's no obligation.

SAVE WASTE PAPER

HINDE & DAUCH *Authority on Packaging*

4230 DECATUR STREET, SANDUSKY, OHIO

FACTORIES in Baltimore • Boston • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J. • Hoboken
Kansas City • Lenoir, N. C. • Montreal • Muncie • Richmond • St. Louis • Sandusky, Ohio • Toronto


Carbon rings and garter springs prevent costly steam leaks.
Trigger-action overspeed protection!
Streamlined buckets made of chrome-iron alloy.
u can set the bine—while op- ating—for the deal" speed.
Here's the strainer that protects the valves and wheel.
The oil is insulated and cooled by circulating water.
Heavy casing and flanges for extra strength.

WHETHER IT'S A 40- OR 160-HOUR WEEK, IT PAYS TO USE TURBINES WHERE . . .

- ★ **low-pressure steam is used. In a variety of industries, such as oil refineries, chemical plants, and paper and textile mills, turbines reduce high-pressure steam to process pressures while producing low-cost by-product power.**
- ★ **reliable drives are essential. Circulating, condensate, and boiler-feed pumps; forced-draft and induced-draft fans; coal stokers and pulverizers are but a few that require never-failing operation.**
- ★ **dependable stand-by power is required for fire pumps, emergency boiler-feed pumps, exciters, and similar auxiliaries. No preliminary "warming-up" period is necessary.**
- ★ **hazards of explosion are present.**
- ★ **a range of speed is required.**
- ★ **the speed must be adjusted automatically as required, to control pump or fan discharge pressure.**
- ★ **unfavorable atmospheric conditions exist, such as dampness and high ambient temperatures.**

It's Easy to See Why

Type D Mechanical-drive Turbines Last the L-o-n-g-e-s-t

With pumps, fans, and compressors required to run continuously for longer periods these days, dependable drives are necessary for defense against shutdowns. To meet today's increased production requirements you'll find it pays to go Type D—to *use G-E mechanical-drive turbines to drive your important apparatus in which some "weak link" may limit production.*

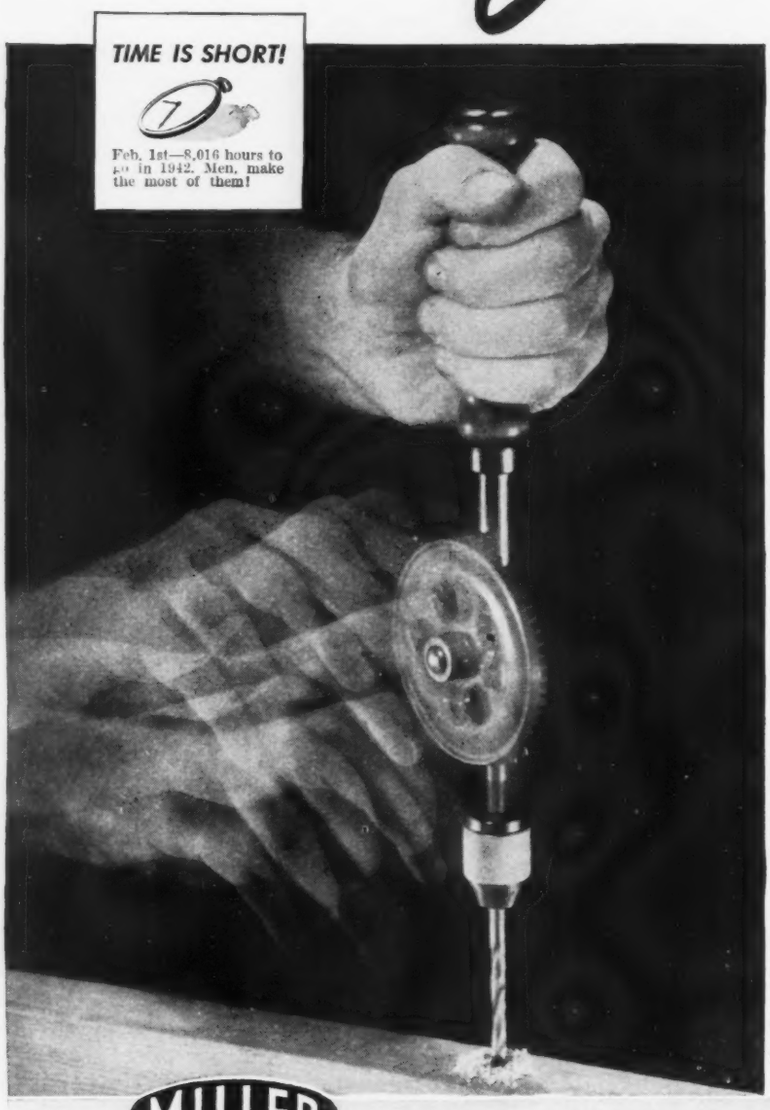
This now-better-than-ever turbine has a strainer to prevent entrance of foreign materials, a combined trip and throttle valve to assure protection against overspeed, and ring-lubricated bearings with the oil supply insulated and cooled by circulating water. Add to these exclusive advantages the chrome-alloy buckets, the dynamically balanced rotor, the sustained efficiency, and the carbon packing glands that reduce steam loss—and you'll realize why Type D drives avoid wasted money and valuable time through shutdowns.

As production gains more speed, more power will be needed. Remember, there's a G-E turbine specialist near who can show you how to get economical power as a by-product of steam. Enlist his help. General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

252-6-450

What you can do to help busy hands work *faster!*



A MILLER Continuous Wireway Fluorescent Lighting System in your plant will minimize worker eye fatigue . . . increase production efficiency . . . speed war effort.

Here's a *proven* way to help your men work better, faster, more surely and with less eye fatigue. Install MILLER 50 FOOT CANDLER or 100 FOOT CANDLER in your factory areas and MILLER TROFFERS in offices and drafting rooms.

Help them see what they're doing clearly and sharply with 50 foot candles or better of working light.

This is a "working tool" we're talking about. At a cost of a few pennies per man-hour it will return dollar wonders in production for you. It is doing that today for other leading *offense* plants.

Prompt response from you will enable us to speed deliveries, render you superlative service. Act today. *(Representatives in principal cities.)*

•

Be sure you get these 5 MILLER fluorescent lighting benefits

HIGHER ILLUMINATION . . . 50 to 100 foot candles—with uniform light distribution.

30 TO 50% LOWER INSTALLATION COSTS . . . Make war production dollars go further.

FASTER INSTALLATION . . . Steps up building schedules—plants get into production quicker.

SIMPLIFIED MAINTENANCE . . . Easty-to-clean, removable porcelain-enamel reflectors—save man-hours for production.

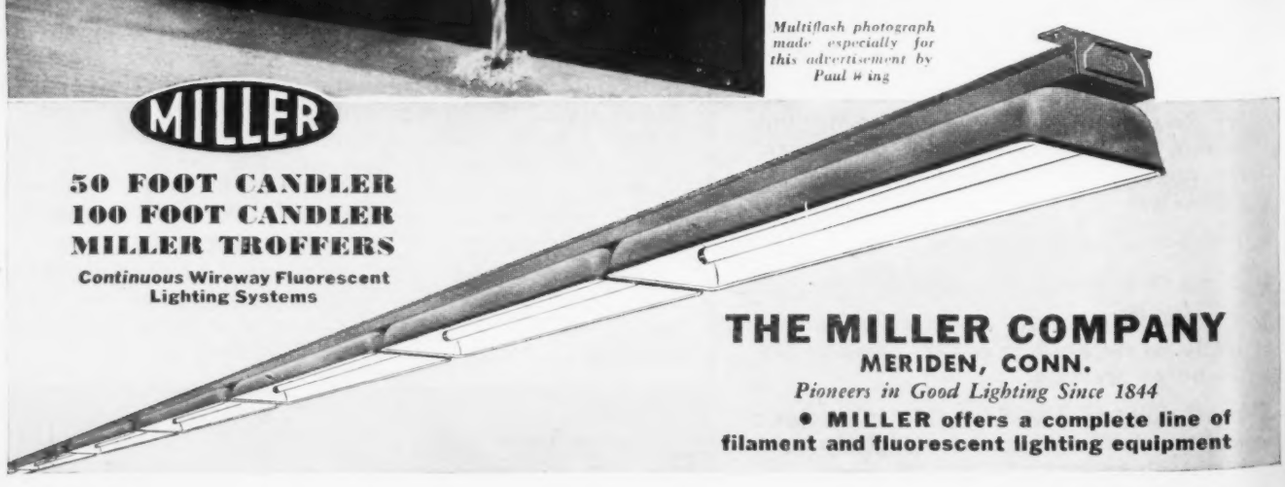
ALLOWANCE FOR FUTURE LIGHTING NEEDS . . . illumination can be increased 45% without new fixtures—lower obsolescence.

Multiflash photograph made especially for this advertisement by Paul Wing

MILLER

50 FOOT CANDLER
100 FOOT CANDLER
MILLER TROFFERS

Continuous Wireway Fluorescent Lighting Systems

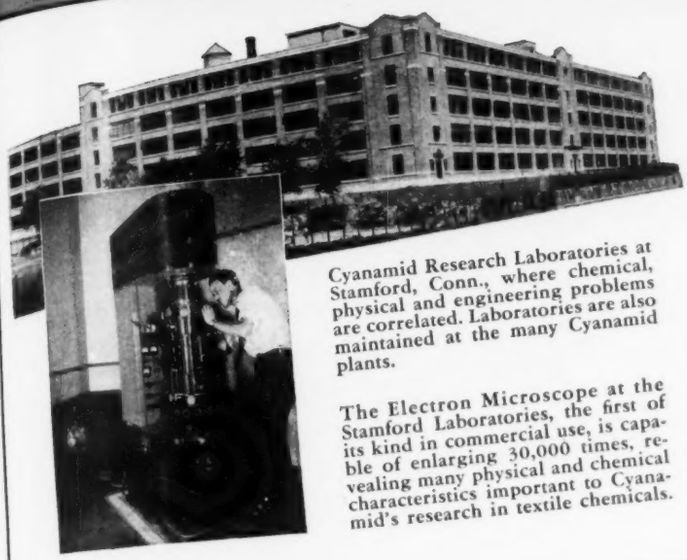


THE MILLER COMPANY
MERIDEN, CONN.
Pioneers in Good Lighting Since 1844

• **MILLER offers a complete line of filament and fluorescent lighting equipment**

RESEARCH!

THE EXTRA VALUE IN CYANAMID QUALITY PRODUCTS FOR THE TEXTILE INDUSTRY



Cyanamid Research Laboratories at Stamford, Conn., where chemical, physical and engineering problems are correlated. Laboratories are also maintained at the many Cyanamid plants.

The Electron Microscope at the Stamford Laboratories, the first of its kind in commercial use, is capable of enlarging 30,000 times, revealing many physical and chemical characteristics important to Cyanamid's research in textile chemicals.

The extraordinary demands of the times are such as to tax the ingenuity of all industry. The textile industry, too, is faced with additional burdens on its capacities, and problems as to its processes and materials. Only the best is equal to the job to be done . . . and the importance of the proper selection of raw materials to meet the new requirements is greater than ever before.

At Cyanamid, research in textile chemicals, always an important phase of the Company's activities, is directed toward advancing the means and methods of meeting present conditions, and conditions that may be faced in the future. The many chemical specialties Cyanamid supplies . . . sulphonated oils, penetrants, softeners, finishes, sizing compounds, wetting agents and others . . . are subjected to critical examination for ways to improve quality and to broaden their usefulness. New products are developed to meet new conditions and to replace others made unavailable due to the emergency. In this work Cyanamid coordinates the most modern chemical, physical testing, and analytical equipment with the talents of a highly trained laboratory staff . . . a procedure that has succeeded through the years in producing better products at lower costs and many new products of timely application to the needs of users of chemicals in industry.

Cyanamid research is devoted not only to matters of materials but also to methods and equipment as well. Cyanamid's chemists, technicians, and representatives, thoroughly trained in the fields they serve, are prepared to examine, test and counsel in relation to specific conditions in a manufacturer's own plant, and help him solve emergency and "chronic" production problems. In any matter relating to the selection and use of textile chemicals, Cyanamid is "on call" to assist you in the most practical and economical way. There is no obligation.

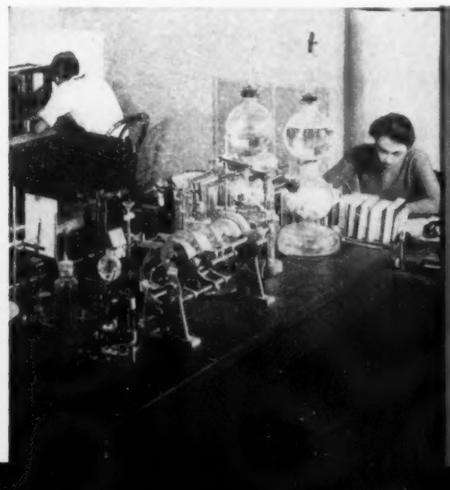
The Launderometer and Heat Curing Box for testing of resin applications are representative of the modern equipment in Cyanamid's Textile Chemicals Laboratory at Stamford.

SULPHONATED OILS; PENETRANTS; SOFTENERS; FINISHES; SIZING COMPOUNDS; DECERESOL* WETTING AGENTS

*REG. U. S. PAT. OFF.

A section of the Physical Testing Laboratory.

A corner of the Micro-Analytical Laboratory.



AMERICAN CYANAMID & CHEMICAL CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY

30 ROCKEFELLER PLAZA · NEW YORK, N. Y.

DISTRICT OFFICES: 3333 Wilkinson Boulevard, Charlotte, N. C.; 89 Broad St., Boston, Mass.; 401 N. Broad St., Philadelphia, Pa.; Russell & Bayard Streets, Baltimore, Md.; 850 Leader Building, Cleveland, Ohio; 20 N. Wacker Drive, Chicago, Illinois; Miller Road, Kalamazoo, Michigan; 931 Fisher Building, Detroit, Mich.; 900 Shell Building, St. Louis, Missouri; Azusa, California

YES..! IN EVERY INDUSTRY LUBRIPLATE *SPEEDS* DEFENSE

On land—on sea—in the air—in every phase of industry vital to defense, LUBRIPLATE lubricants are doing jobs that are nothing short of amazing. From a smear on the worm screw of the naval officer's binoculars to a ton of LUBRIPLATE in the dredge underwater gear case—against friction and wear—thwarting rust and corrosion—conserving bearings and parts—LUBRIPLATE carries on.

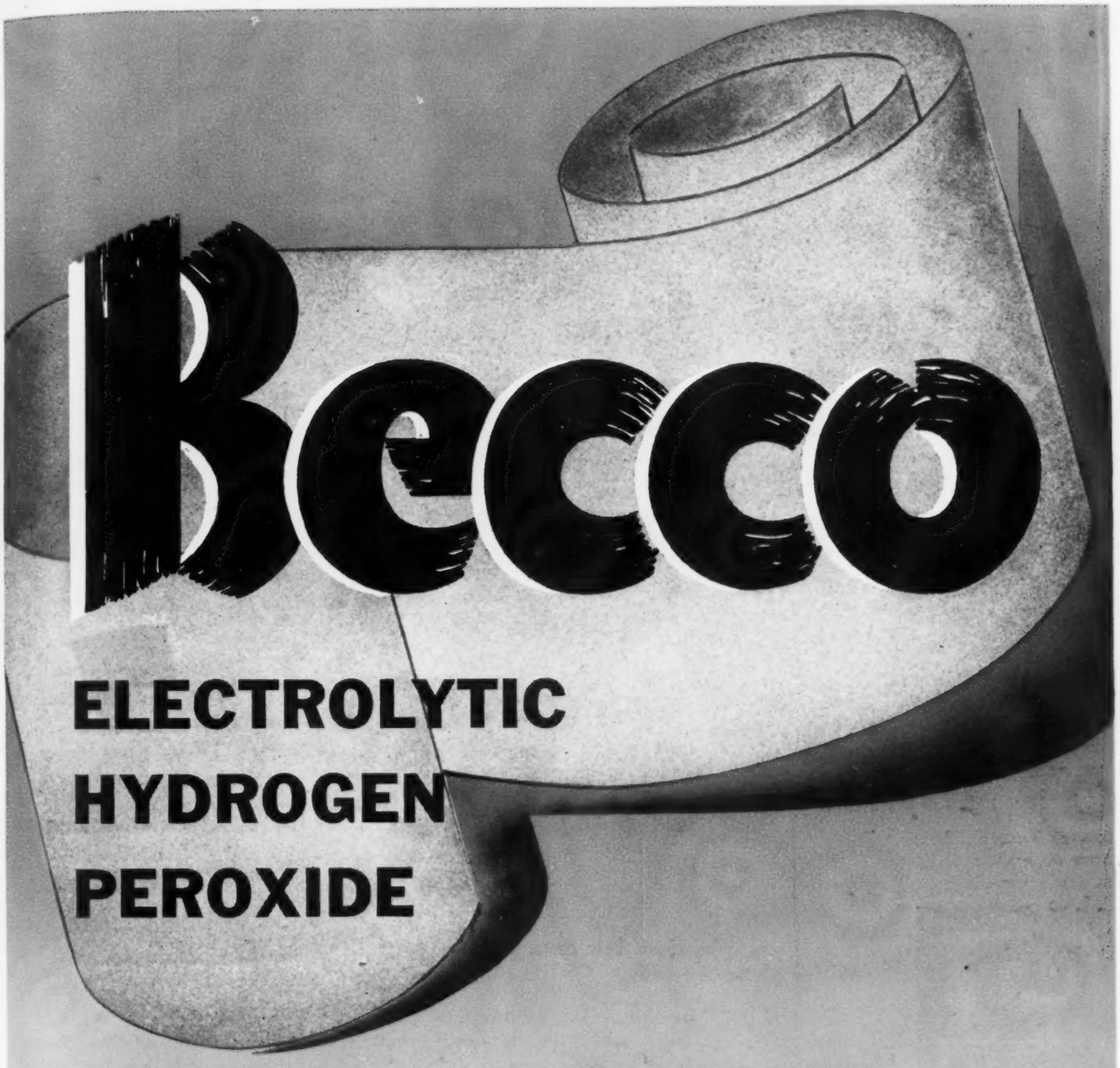
In spite of heat and high water—tractors and trucks rolling through muck and mud—spotless food packing machines constantly washed with scalding water—textile spindles whirling faster than ever before—marine equipment exposed to highly corrosive seawater and spray—LUBRIPLATE lubricants perform under conditions that would stop ordinary lubricants cold.

LUBRIPLATE DIVISION
FISKE BROTHERS REFINING COMPANY
SINCE 1870
Newark, N. J. Toledo, Ohio
DEALERS FROM COAST TO COAST

LUBRIPLATE

"Its the Film"

THE MODERN LUBRICANT *that Arrests Progressive wear*



Keep in touch with

BECCO

HYDROGEN PEROXIDE TECHNICAL SERVICE

for accurate, reliable, and comprehensive information on Peroxide Bleaching of all fibres...by all Methods and Procedures including all systems of Continuous Bleaching.

BECCO SALES CORPORATION

BUFFALO, N. Y.

Branch Offices in Boston, New York City, Philadelphia, Chicago and Charlotte

This Simple Test Shows Why the CONCAVE SIDE Cuts Belt Costs!

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

If you care about belt costs, pick up any V-belt you have handy and make this simple test:—

Bend the V-belt while you grip its sides and you will feel how the belt changes shape. The top, under tension, narrows. The bottom widens. The sides of the belt bulge out. Clearly, if its sides were straight to begin with, the bent belt is forced into a shape that does not fit the sheave groove—as shown in figure 1, on the left.

Now, bend a V-belt built with the patented Concave side. You get the same shape change, but now the new shape exactly fits the sheave groove—as shown in figure 2. There is no side-bulge. Results? (1) Uniform side-wall wear—longer life! (2) The belt gets a full side-width grip on the pulley—carries heavier loads without slippage. This cuts belt costs and saves power.

Only belts built by Gates are built with the Concave side, which is a Gates patent.

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Denver, Colo. 999 South Broadway
Dallas, Tex. 2213 Griffin Street
Portland, Ore. 333 N. W. 5th Avenue
San Francisco, Cal. 2700 16th Street

U. S. Navy "E" Insignia (twice size) awarded employees of Textile Machine Works for outstanding production of Naval Ordnance materials for defense.

Romantically yours . . . Every woman knows that the romance of her stockings is in the quality of the fabric. Every hosiery manufacturer knows that good needles are the best safeguard for better fabric and bigger profits in full-fashioned knitting. . . . Keep your knitting machines young and effective with TMW Needles.

TEXTILE MACHINE WORKS • READING, PA.

U. S. Navy Ordnance Flag and "E" Pennant awarded Textile Machine Works for outstanding production of Naval Ordnance materials for defense.

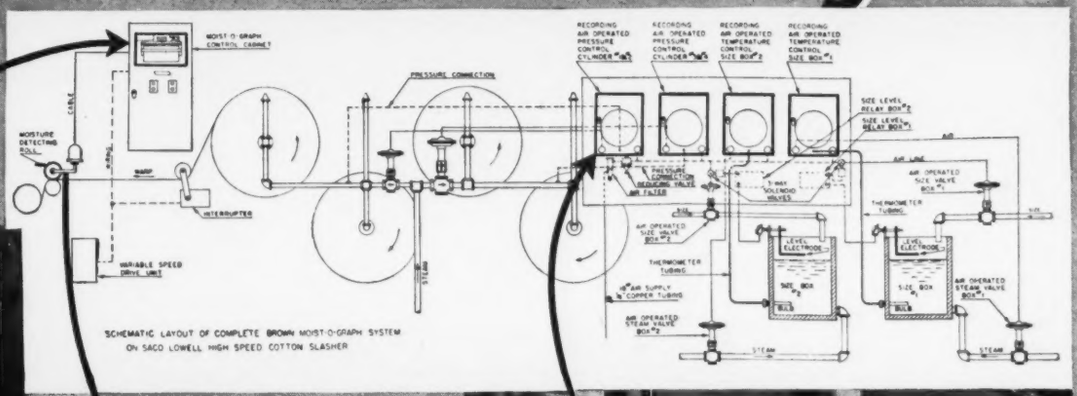
"It is not enough to run, one must start in time."

FRENCH PROVERB

Regardless of the fibre used, the new READING 30-section 51-Gauge Full-Fashioned Knitting Machine produces 104 per cent more volume and 156 per cent more value than ordinary 20-section 42-gauge machines. . . . *And remember: Money invested in modern machinery serves as insurance for your total investment.*

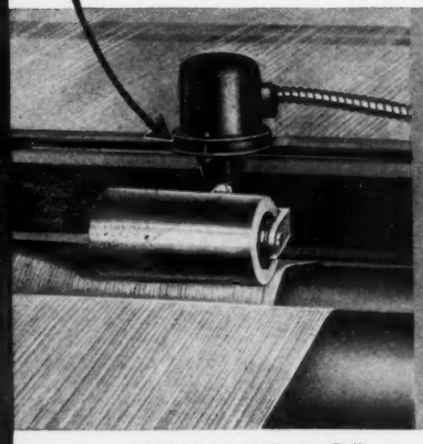
TEXTILE MACHINE WORKS • READING, PA.

WHAT USERS LIKE - *about this Slasher Control System*

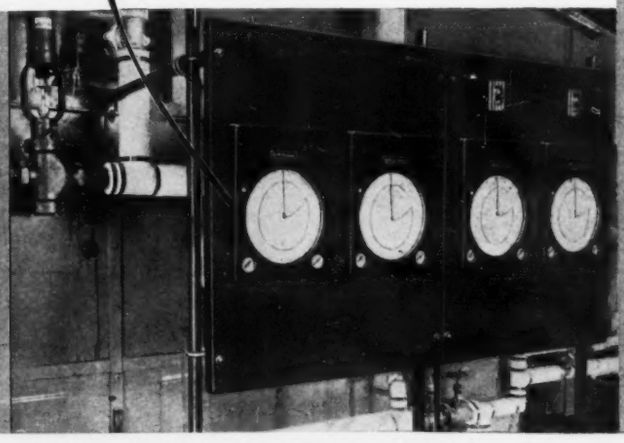


SCHEMATIC LAYOUT OF COMPLETE BROWN MOIST-O-GRAPH SYSTEM ON SACO LOWELL HIGH SPEED COTTON SLASHER

MOIST-o-GRAPH Recorder Controller in Lint-Proof Cabinet.



The Moisture Detector Roll.



The Live Steam Side of the Cylinders showing Regulating Valves and Pressure-Recording Instruments

MOIST-o-GRAPH Directly Measures Moisture Content and RECORDS Per Cent Regain

At the Lockwood Company Mills of Waterville, Maine, where the Brown Moist-o-Graph Slasher Speed Control System is installed on a Saco-Lowell Model C Slasher, the following advantages have been noted:

1. **A large increase in production per machine, with corresponding decrease in cost.**
2. **The regain in the warp is held within very close limits by precise control of the yarn speed over the cylinders.**
3. **A visual, permanent record of the moisture content of every beam from beginning to end.**
4. **Elimination of damage to the yarn by either over-drying, breakdown of the sizing mixture, or other fibre damages.**
5. **The more even application of the size, its better penetration, and the efficient removal of the surface surplus results in a saving of size materials, and the reduction of shedding in the weave room.**
6. **Better drying removes the danger from mildew and other fungus growth.**
7. **There is a definite saving in steam per pound of yarn dried.**
8. **Weave room efficiency has been increased due to better sized warps.**

The Brown MOIST-o-GRAPH measures regain with an accuracy which numerous installations have shown to be far above that obtained in routine laboratory tests, and records it on a 12" chart.

The MOIST-o-GRAPH controls within plus or minus ½ per cent regain. Mills that have never attempted to operate their slashers above half capacity now find it possible to safely increase slasher speeds 40% and more.

The Brown MOIST-o-GRAPH operates on the principle that for every per cent regain yarn has a corresponding electrical resistance. As the yarn passes over the back press roll—the Moist-o-Graph detecting roller, in direct contact with the yarn, records moisture content continuously in terms of per cent regain.

The Brown MOIST-o-GRAPH is easy to install on cotton and rayon slashers.

Write the BROWN INSTRUMENT COMPANY, a *division of Minneapolis-Honeywell Regulator Co.*, 4509 Wayne Avenue, Philadelphia, Pa. Offices in all principal cities. Toronto, Canada: 117 Peter Street.

SEND FOR THIS BOOKLET

To get the complete story on Brown Moist-o-Graph Control System, write for Booklet No. 9304. It fully describes the Brown Moist-o-Graph Control System . . . instrumentation of slasher and size box control.

BROWN MOIST-O-GRAPH

To Measure and Control is to Economize

"I've sure noticed the difference with
GULF
QUALITY LUBRICANTS"
Says this Overseer of Weaving . . "I don't have nearly so many repair part orders to sign"

"I DON'T need to look through our maintenance records to prove that we're getting better lubrication with Gulf quality lubricants," says this Overseer of Weaving. "I have first-hand evidence —I don't have nearly so many repair part orders to sign since we adopted Gulf Engineering recommendations."

You, too, can tell the difference when you use Gulf quality lubricants for any length of time. Through exhaustive research, Gulf has developed special lubricants for the textile industry with performance qualities which give you such tangible evidence of bettered lubrication. Their greater stability and higher lubricating value show up in actual service. And built into these quality lubricants are stamina and endurance—they stand up and give *full protection* under continuous peak-load conditions — conditions which often cause breakdowns or interruptions to production schedules. Result: Greater output from Gulf-lubricated equipment—and lower maintenance costs.

The Gulf line of more than 400 quality oils and greases is quickly available to you from 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION · GULF REFINING COMPANY · PITTSBURGH, PA.

Here's a new way to take the rabbit out of the hat

Time was when fine hats were made of Belgian Hare. Now mixtures of natural and casein-synthetic fibers that "felt up" beautifully are being used. And only an expert hatter can distinguish this type of felt from an all-fur felt.

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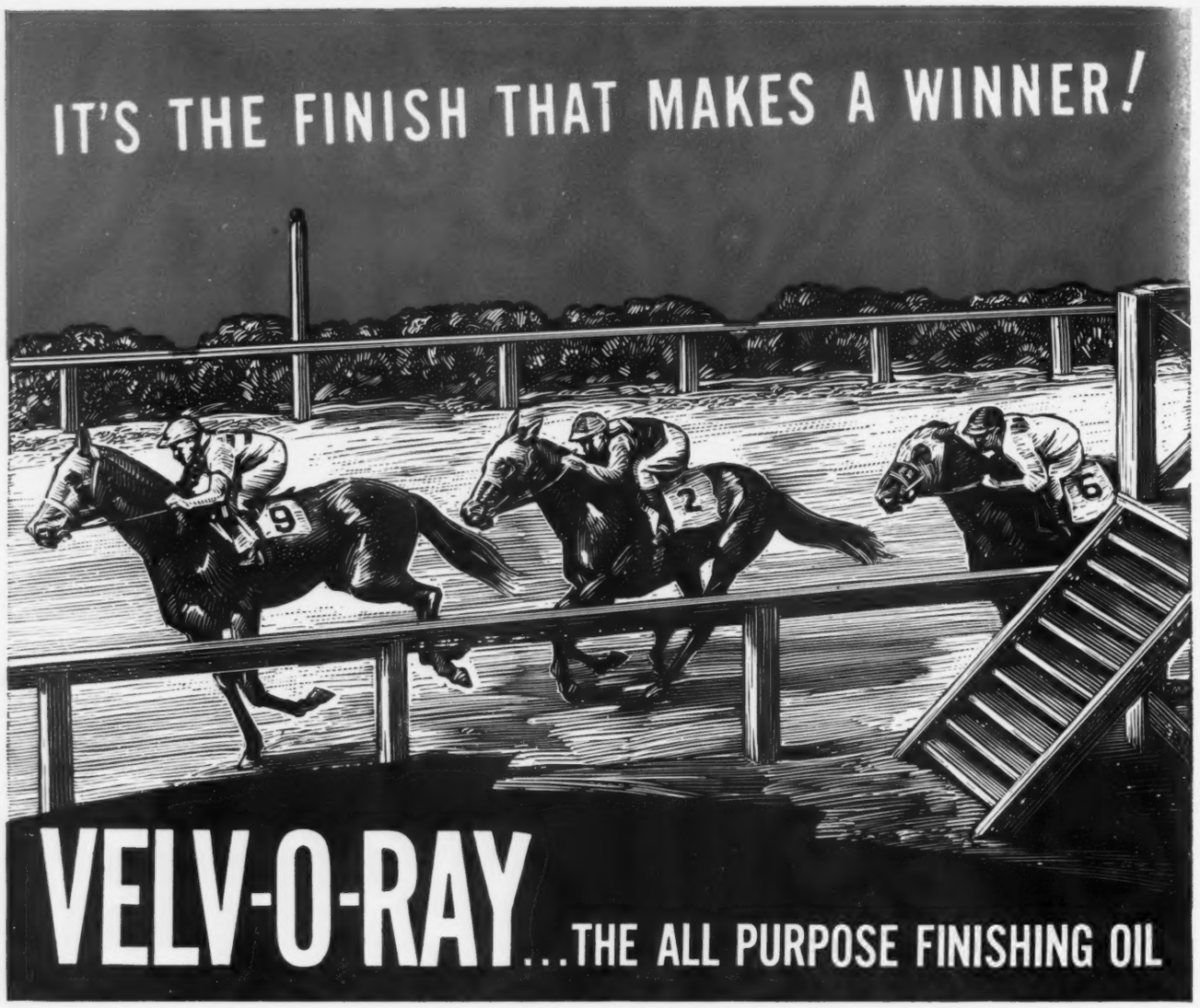

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IN THE NEXT

FOLLOWING TEXTILE WORLD'S editorial program connected with, first, National Defense, and, now, the War, which started the very month of the beginning of the defense program back in the spring of 1940 and reached a milestone with the publication of the "Textile War Manual" in last month's issue, we plan to publish in our March issue two outstanding technical articles having to do with fabrics for military use. One of these will be entitled "Manufacturing Army Overcoatings" and the other "Finishing Army Overcoatings." These will be in addition to the regular department on "Fabrics for Military Use." There will also be another in the series of articles on "Why QM Rejects Fabrics."

In the same category will be a check-up story from our Washington office bringing up to date information on purchases by the Quartermaster Corps; priorities; price controls; and all the other war measures, the correct interpretation of which means so much to industry today.

Other particularly important articles in the next issue will be one on "New Hosiery Styles" and another on "Maintenance of Electrical Equipment."

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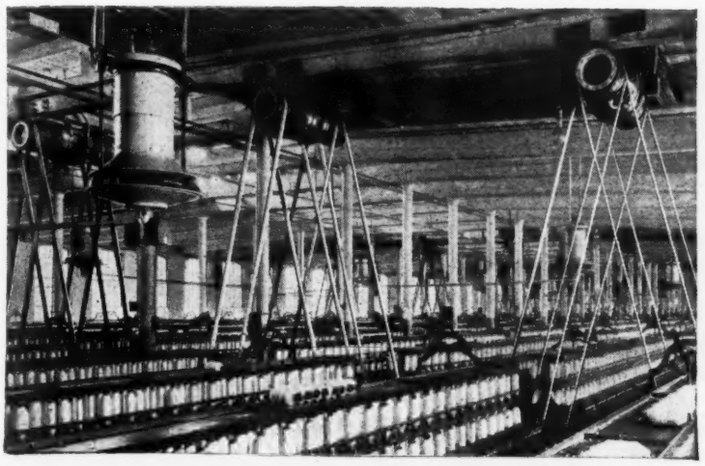

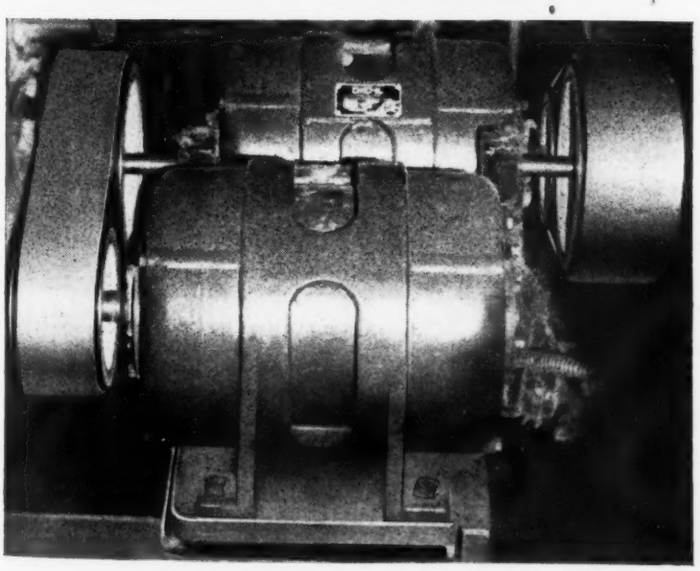

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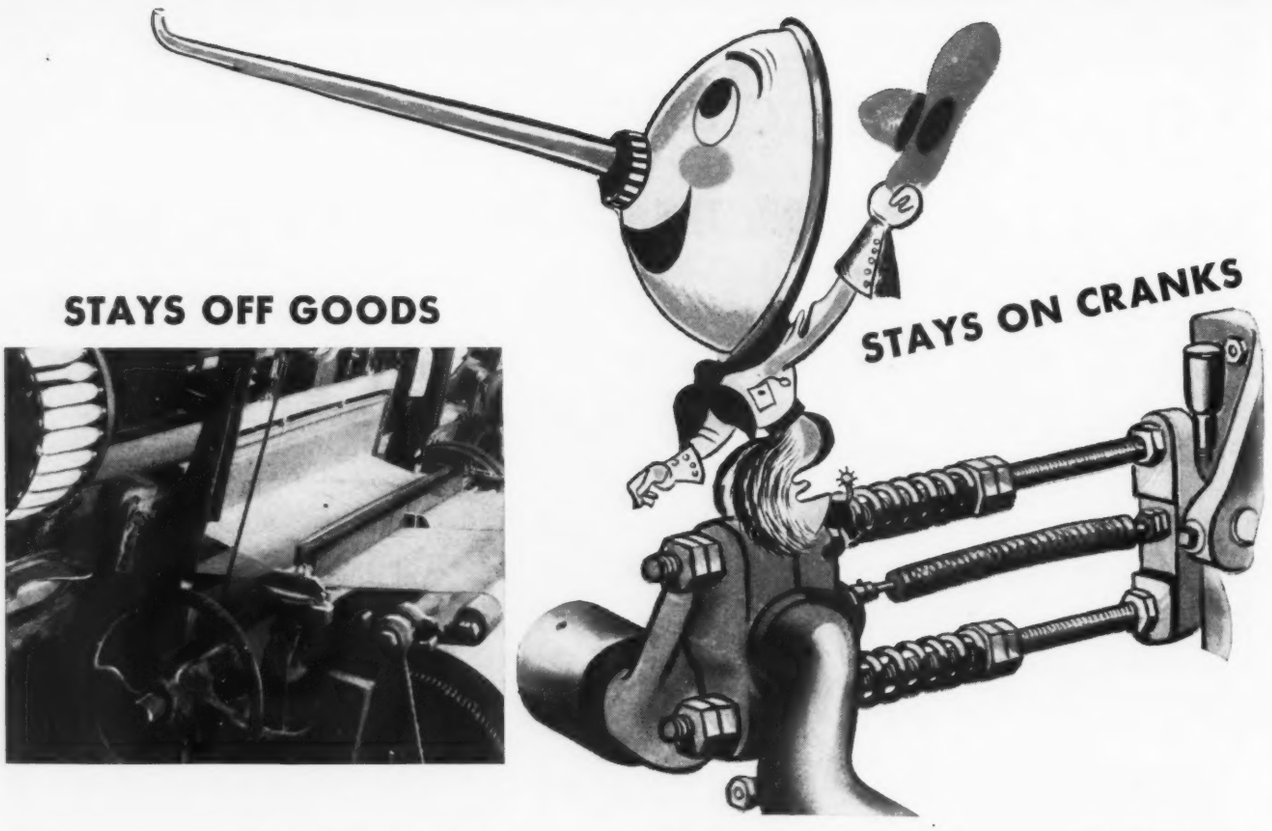

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Textile World
ANNUAL REVIEW AND FORECAST SECTION

Textiles Make It Three in a Row

By DOUGLAS G. WOOLF

LAST YEAR, on this page, we head-lined the fact that "Textiles Hit Jack-Pot Twice Running." This year, twice becomes thrice. For the third successive year, textile activity in 1941 broke all previous highs. For an industry with its ups and downs—and at one time known for a cyclical rhythm of one year up, followed by one year down—this is some accomplishment. The credit, or possibly the blame, goes to Hitler, of course.

The bad news—which we might as well get over right at the start of this article—is that, whereas a year ago every indication pointed to continued record-breaking performance in all branches of the textile industry, this year the program is going to be different. True, we shall have a production of textiles for military and essential industrial uses greater than any in history, not even excepting the last World War. That will result in an over-all textile activity which will make 1942 another big year. But many branches of the industry will not share in that prosperity. Production of women's hosiery, of style goods in woolens and worsteds, of carpets and rugs, of fine cotton and rayon fabrics for civilian use, will decline sharply. This will mean dislocation of labor, and hardship to invested capital, in those branches. To the extent to which they can switch to military and industrial fabrics, depends the solvency of labor and capital in the companies affected.

TABLE I

TEXTILE WORLD'S Textile Mill Activity Index

1923–25 average = 100

1929	115
1930	89
1931	93
1932	83
1933	104
1934	90
1935	105
1936	124
1937	125
1938	103
1939	132
1940	142
1941	188

More of this later on. Before we indulge in sadism, a little gloating over 1941's performance is in order. Look at Table 1. TEXTILE WORLD's index of textile mill activity reached the incredible figure of 188, on the basis of 1923–25 as 100, just about a one-third increase over the previous incredible figure of 142 for 1940. That same table shows us, by a little mathematical analysis, that the average index for the last six years (1936 to 1941 inclusive) was 136, against an average index of 94 for the previous six years (1930 to 1935, inclusive). In other words, recovery in textiles *has* been achieved—and in a big way.

This fact is dramatized in Chart I. The continuous rise in textile mill activity from the low point in 1932 was interrupted only in the years 1934 and 1938. The advance since the latter year has been what Hollywood would call colossal. 1941's performance was what the same agency would call super-colossal. In that year, the month of October

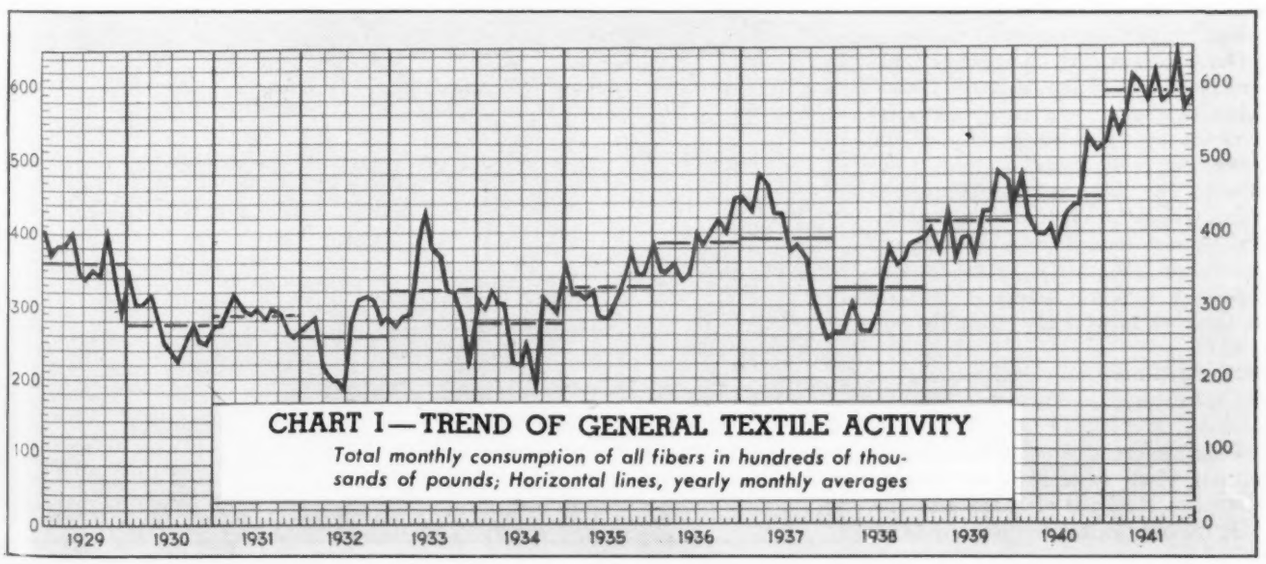


CHART I—TREND OF GENERAL TEXTILE ACTIVITY

Total monthly consumption of all fibers in hundreds of thousands of pounds; Horizontal lines, yearly monthly averages

established a record which will probably stand for a long, long time. In that month, 651,000,000 lb. of textile fibers were consumed by domestic mills; or as much as was consumed, on the average, in two and a half months—nearly a full quarter—of the low year 1932. Read that statement over; it's something to think about.

Our hunch is that "Remember October, 1941" will become a textile slogan. When this war is over, and we start to re-clothe the denuded peoples of the world, we will probably have more months like that, and maybe months which will make that look like a piker. But, in the meantime—what with rationing of raw material, etc.—October 1941 will probably retain its position as the champion of all textile months.

HOW ABOUT the individual branches of the industry? The answer is found in Charts II and III. In Chart II, we record the performance of the three major natural fibers from 1929 to date, all plotted on the basis of 1923–25 as 100. Silk, the outstanding performer in 1929 on that basis, with an index of 150 plus, dropped to an index of 37(!) in 1941. In 1942 it will be almost lower than the proverbial snake's belly. Cotton, starting at about 115 in 1929, reached 171 in 1941. Wool, starting only a little bit better than par in 1929, reached the staggering index of 204 in 1941—more than twice the so-called normal, the 1923–25 average.

But then, drop your eyes to Chart III. This has been drawn on a scale which will permit the intrusion of the erstwhile "upstart," rayon. Despite the fact that this rank outsider had recorded an index of 275 in 1929 (again on the basis of 1923–25 as 100), and despite the fact that at almost every stage of its progress the non-believers had predicted that the rayon bubble would burst, it went on and on and on—until in 1941 it reached an index of 1300—thirteen times the base of the 1923–25 average; anyone who wants to place some future limit on rayon and other synthetic fibers may do so. For our part, we repeat our oft-stated conviction: that textile manufacture will

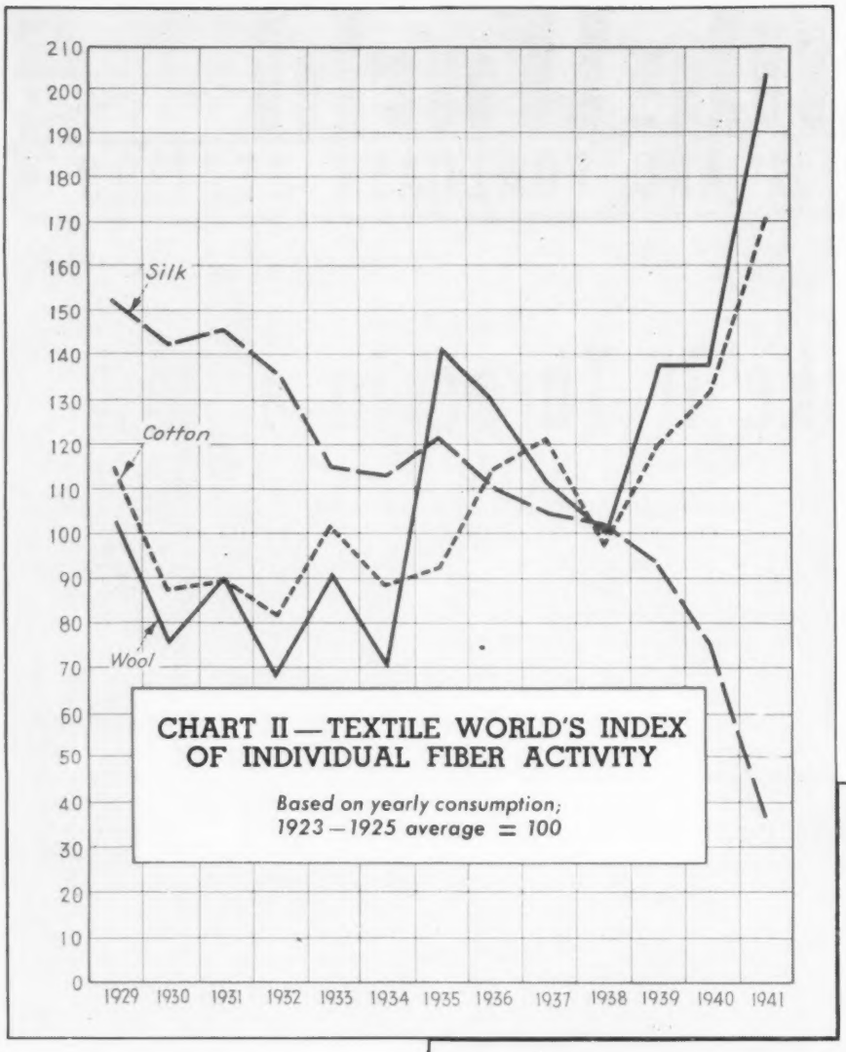


CHART II—TEXTILE WORLD'S INDEX OF INDIVIDUAL FIBER ACTIVITY

Based on yearly consumption; 1923—1925 average = 100

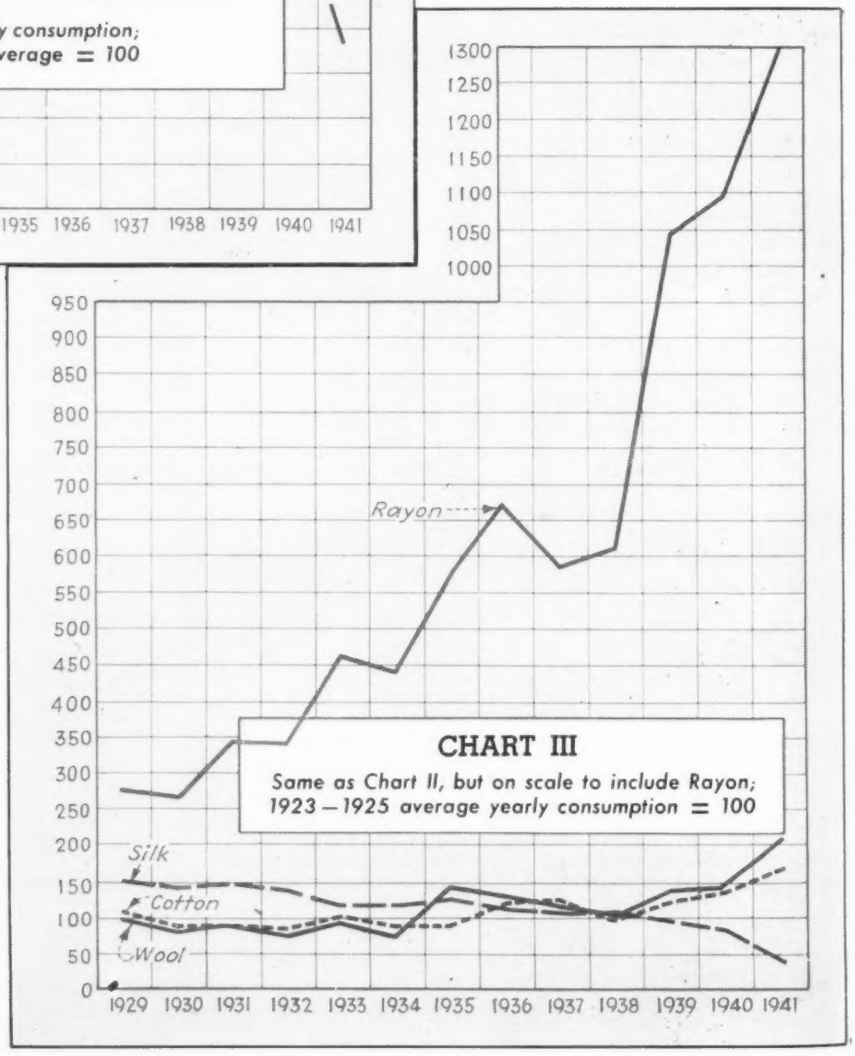


CHART III

Same as Chart II, but on scale to include Rayon; 1923—1925 average yearly consumption = 100

eventually be primarily a synthetic industry.

BUT TO COME BACK to the outlook for 1942: We have already indicated that there are troubles ahead, grievous troubles. A nation cannot go into an all-out war—not only to safeguard every principle it holds dear, but actually to save its own skin—and expect any branch of its economy to escape unscathed. The textile industry bears the first battle-scar of the war: the defeat of the silk-hosiery industry. Textiles will bear more scars. Great organizations, tooled-up to produce the myriad of styled goods which consumers want, will be stripped of most of their functin in this field. If the war lasts long enough—and it looks as if it will last plenty long—the textile industry will be reduced largely to the business, first, of clothing the armed forces; second, of supplying needed industrial fabrics to the arsenal of democracy; third, and a poor third, of producing utility fabrics which will keep the mass of civilians decent, if not beautiful.

As allocation of raw-material, metals, and man-power progresses, there probably will eventuate "concentration" of textile production in the mills best equipped to meet the most vital needs of a nation at war. It has happened in Lancashire. It will happen here, only to a lesser degree.

That is the picture at its worst.

THE BRIGHT SIDE, so far as textile manufacture is concerned, is that it is in a better position than any other major industry. The dislocation of labor and of capital will be less acute, by and large, than in any other major industry. The same mills now in existence, with *relatively* minor shuffling, will produce the three types of fabrics itemized above. Consumers will suffer more than will the industry itself.

This industry stands as the brightest target for continued sales attack by other industries which sell to textile mills. Textile manufacturers themselves should be heartened by this fact. *Instead of wholesale liquidation of sales, promotion, advertising, and research staffs, there should be a maintenance and even a strengthening of those staffs.* Their functions will have to be re-orientated, it is true, but their objective should be kept crystal clear. That objective is a prosecution of sales ingenuity, or product development, of research activity, of promotional programs, which will put this industry in the position to go forward, after the war, to production and sales levels hitherto undreamed of.

That can be done. It must be done. Taxes and rising costs will take their toll, but these hold no threat greater to future textile security than the ever-present threat to the mental alertness which has resulted in the progress reflected in the charts accompanying this article. If that flexibility of mind is lost, then all will be lost.

It cannot be lost. It will not be lost.

Machinery Sales Index Soars

BORN IN 1929, spending its infancy in the depression years, reaching adolescence during the recovery period, TEXTILE WORLD's index of dollar sales of machinery, accessories, and auxiliary equipment to textile mills finally threw off all restraint in 1941, and went to town. It went through the roof, in fact, as may be noted in Chart IV.

The 1941 index (based on 1929 as 100, as shown in Table II) was 161, or 40% above the previous year, 1940, which in turn had been a record high for the period covered by this survey.

By branches of the industry, sales of preparatory, spinning and weaving equipment increased 45% over 1940; finishing machinery sales were up 24%; knitting machinery and related equipment, 36% up; and sales of accessories and auxiliary equipment increased by 50%.

These facts are based on information supplied to us in confidence by manufacturers of such equipment and accessories. In most of the categories, the reporting firms ran fairly close together, but there were a few cases of wide disparity due to particular conditions affecting the companies involved.

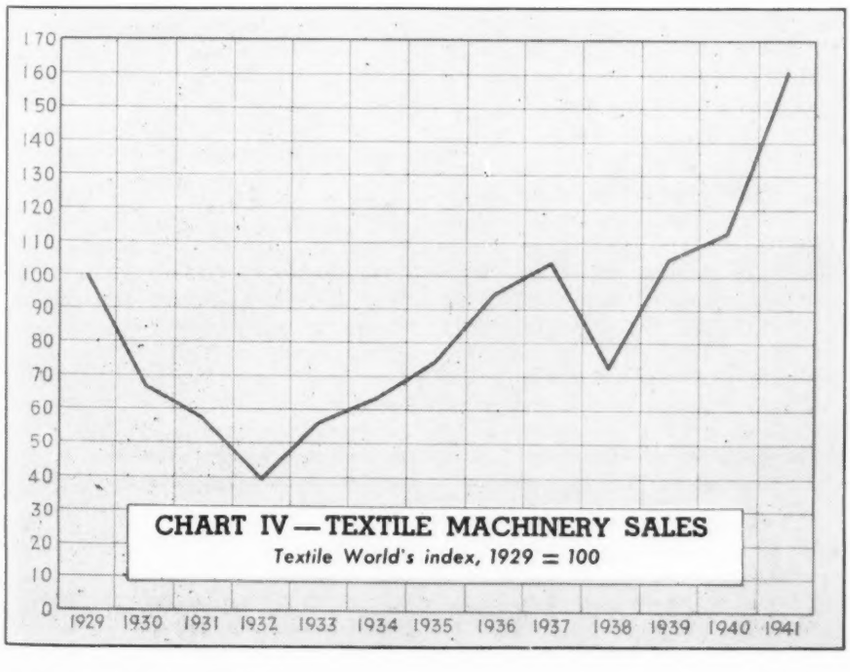


CHART IV—TEXTILE MACHINERY SALES
Textile World's index, 1929 = 100

FOR 1942 there is no prospect of a continuation of this sharp upward trend. On the contrary, machinery manufacturers are frankly pessimistic and expect to ship in 1942 only a portion of the 1941 total. Accessory manufacturers, on the other hand, expect their high rate of sales to continue.

The explanation is obvious: The potential business is here, but there will be no metal for new equipment except in certain cases. On the other hand, there will be a well-maintained sale of repair parts and accessories, to keep up with the record-breaking volume of textile mill production itself. The net effect on TEXTILE WORLD's index of machinery sales will be a decline in 1942 from the 1941 index. How much of a decline is anybody's guess at the moment. Not mine.

THE ABOVE POINT OF VIEW is sub-

stantiated by the following extracts from letters received in the survey:

▶ "It would appear that the manufacture of textile machinery in this new year would be sharply restricted, if not stopped entirely, unless of course it can be proved that the machines are essential for Government orders. Up to the present time, we have not experienced any real difficulties in securing materials, but we are starting to see that the 'reins' are being tightened, and our suppliers are showing more caution in completing or filling our orders."

▶ "I believe that with our system of priorities and allotments completely controlling the situation for the year 1942, our shipments of hosiery machines will be reduced approximately 25%, not as a result of demand, but as a result of regulation since we must favor equipment relating to war and the support of such activities. I see no justification or need for the production of hosiery knitting machines, but I do visualize a need of expanding the parts for knitting machines by at least 40% over last year."

▶ "In regard to the outlook for textile machinery sales in 1942, I am frankly very doubtful if these will amount to more than 15% of normal output for new equipment and 30 to 35% for repairs. The present trend is definitely towards preventing any expansion of the industry and reducing maintenance parts to actual requirements. The general opinion held by practically all of the machinery makers is that anywhere from 50 to 60% of their output will shortly be diverted to war efforts."

▶ "If it were not for the virtual certainty of material allocations to ourselves and the actual fact of wool allocations to our customers, we should have reason to think that the year 1942 would give us as large a volume as enjoyed in 1941. However, it would be more than optimistic to expect such a volume of business from our textile customers to prevail in 1942."

▶ "The unfilled orders we have on file are sufficient to keep us busy well into May and will do so provided restriction do not prevent us from filling these orders. Even in view of this back-log we do not anticipate a volume in 1942 as we had in 1941. The problems before the hosiery industry are most serious, so we expect a very heavy curtailment of sales of our standard line after the middle of the year. Defense work will apparently absorb a substantial part of our capacity but we don't think it will be sufficient to offset the business we will lose by reason of curtailment of sales of our regular line."

TABLE II

TEXTILE WORLD'S Textile Machinery Sales Index

1929=100

1929	100
1930	67
1931	57
1932	39
1933	56
1934	63
1935	74
1936	94
1937	104
1938	73
1939	105
1940	115
1941	161

▶ "Provided we are able to procure materials and the textile industry is enabled to pass on to us suitable priority ratings we think our sales to the industry during this 12-month period is bound to exceed last year. It seems now that only the lack of material or suitable priorities can prevent a rather substantial increase but on the other hand there are indications that scarcity of copper and copper base alloys and stainless steels largely used in our equipment will get more severe as the war effort works to a peak."

▶ "Present war conditions and the need for allocating of metals to war needs, will keep down a lot of anticipated development in both the rayon and cotton fields. There will, of course, be some extension in cotton textiles to take care of very much increased Army and Navy needs, but a lot of this work will undoubtedly be spread to cotton mills that have been working on civilian needs and thus tend to keep down extensions. We would anticipate that the textile field from our sales standpoint will not increase in 1942 over 1941."

▶ "My impression is that textile machinery sales may be down, while sales of repair and maintenance will probably 'up.' The rising market for textiles would seem to predicate increased machinery production but on the other hand the job of being arsenal for the whole world imposes a tidy task upon our production facilities. To me the implications of recent OPM orders is that outside of strictly munitions production we have all got to get along with what we have—fix it up some way."

▶ "We are far from optimistic about 1942 and as a result will not feel too much disappointed over a very considerable recession from 1941. The cause of this is the diversion of metals to the production of war materials. Both the delay in getting materials when they can be had or the inability to get them at all on the basis of the priorities available from textile mills has already materially cut our sales."

▶ "If we could obtain materials to build the machines we could sell, we would expect to at least equal our 1941 volume and might increase this by 10% to 15%. However, since it is uncertain whether we can procure these materials and whether we will obtain licenses for exporting machines to our growing South American trade, it is of course impossible for us to make any intelligent estimate of our 1942 volume. Based on the experience in England and Canada, we would guess that we would be allowed to produce at least 50% of our 1941 volume in our regular line."

▶ "We believe that 1942 should be at least as good, provided it is possible to obtain materials. We know that a great many of our customers this year have had Government business and were able to extend Preference Rating Certificates to us but we understand that it is getting increasingly difficult to extend these certificates."

▶ "We do not have any hopes for any substantial volume for knitting machine sales. The Government already has under consideration the question of allocating materials to the textile machinery group, and, no doubt, the volume of machines we will be able to manufacture will be seriously curtailed in the very near future."

▶ "Since Nov. 1, when it became apparent that we were about to be involved in a war, such restrictions have been put upon us regarding export business that it is becoming more difficult every day to plan any sales program to cover even the first four to six months of 1942. Potential sales for the textile machinery trade in our opinion will consist mostly of essential repairs and replacements and only such items as are approved by OPM under the preference rating scheme."

▶ "We are not very optimistic of the textile industry's outlook during 1942. Most of the mills that need machinery and equipment have very low preference ratings for the purchase of this equipment and are consequently severely handicapped. Furthermore, many of our customers not in a position to bid on national defense requirements are already experiencing a decided slackening in business activities in their lines."

▶ "Concerning 1942, because of the very abnormal and unusual circumstances, our guess is that due to restrictions of one kind or another, the volume will fall off, roughly 25%."

▶ "Although the present indications are that our business for the year 1942 will continue at about the same level as for the previous year, it is difficult, if not impossible, to say what the results will be. There is a question whether or not our customers will be permitted to continue their purchases of new equipment and repair parts and it is becoming increasingly difficult for us to secure materials to fabricate. Final results depend upon the Government's attitude toward the industry as a whole."

▶ "With regard to our opinion in 1942, we believe if we are able to ship 25% of the volume shipped last year we shall do remarkably well."

▶ "The past year has been the biggest we ever had; our sales were 25% above anything in our history, and to the textile trade in general about 20% above our record. This has been due a great deal to war conditions and overtime schedules, consequently greater production. To my mind it's a very unhealthy condition from a business standpoint, for there is a lot of material being bought actually for temporary use, and this will all come onto the market in some form or another within a short time (when we get this war settled) and consequently I have a feeling that every shipment we make has got somewhere a headache for us in the near future."

BUT NOT ALL OUR CORRESPONDENTS are quite so pessimistic. Here are a few in a better vein:

▶ "As regards an expression from us as to our opinion as to the outlook for textile machinery sales in 1942, we are under the impression that there will be an increase of 10 to 15% in 1942 over 1941."

▶ "We start 1942 with about double the unfilled orders of Jan. 1, 1941; however we can not look for any increase in our volume for 1942. It appears that further restrictions will be made on civilian production. Without new curtailing orders our volume for maintenance and repair should be about the same in 1942 as 1941."

▶ "Every indication is that sales will be just as good for 1942 as they were in 1941. I believe that most of us in the textile machinery business are running well over 100% productive capacity and without considerable expansion in buildings and man-power, I do not see how it is possible to very greatly increase shipments this year over last year."

▶ "We are looking forward to a further increase of about 10% for 1942."

▶ "The outlook for 1942 seems very favorable from the standpoint of sales but at this time we would rather not make any prediction as to the delivery situation."

▶ "There are certain to be some raw material shortages. What these will be and how the textile industry will be affected is impossible to determine. There is a probability of a labor shortage, if we build an army of the size that we are now talking about. There is the uncertain effect on civilian demands of the disruption of industry in transferring the entire country to a war economy. With all of these uncertainties, I feel that the textile industry is one of those fortunate industries whose full production will be required to promote the war effort and meet essential civilian demands."

▶ "We are sold up for months ahead and it looks to us as if demand will be greater as long as the war continues."

Here is a heartening tribute to our old friend Research:

▶ "In 1940 our total business including all branches of the textile industry as well as special machines not related to the textile field showed an increase of over 150%. In 1941 our total business by the same measuring stick increased approximately 300% over 1940. On this basis our 1941 volume was 750% greater than 1939 and if we go back to a comparison of a 1920 year, I still find that our business increased 325% over the top figure of the year 1929. All of these figures result definitely from our program of research and development in a field of closely related industries and are premised upon the abilities of our organization, both in personnel and modern equipment, to expand in a trend based upon diversification."

FINALLY, here is a slogan for the entire industry:

▶ "1942 will be a period of severe dislocations in our business pattern, particularly to do with metals procurement. Restriction of metals use as to ordinary channels is perhaps as it should be, as those metals which we must do without will be employed in the defense arena and will be employed effectively. *We plan no disruption to our program of research and development in the primary aim of being prepared for ordinary business when the defense spurt has ended.*"

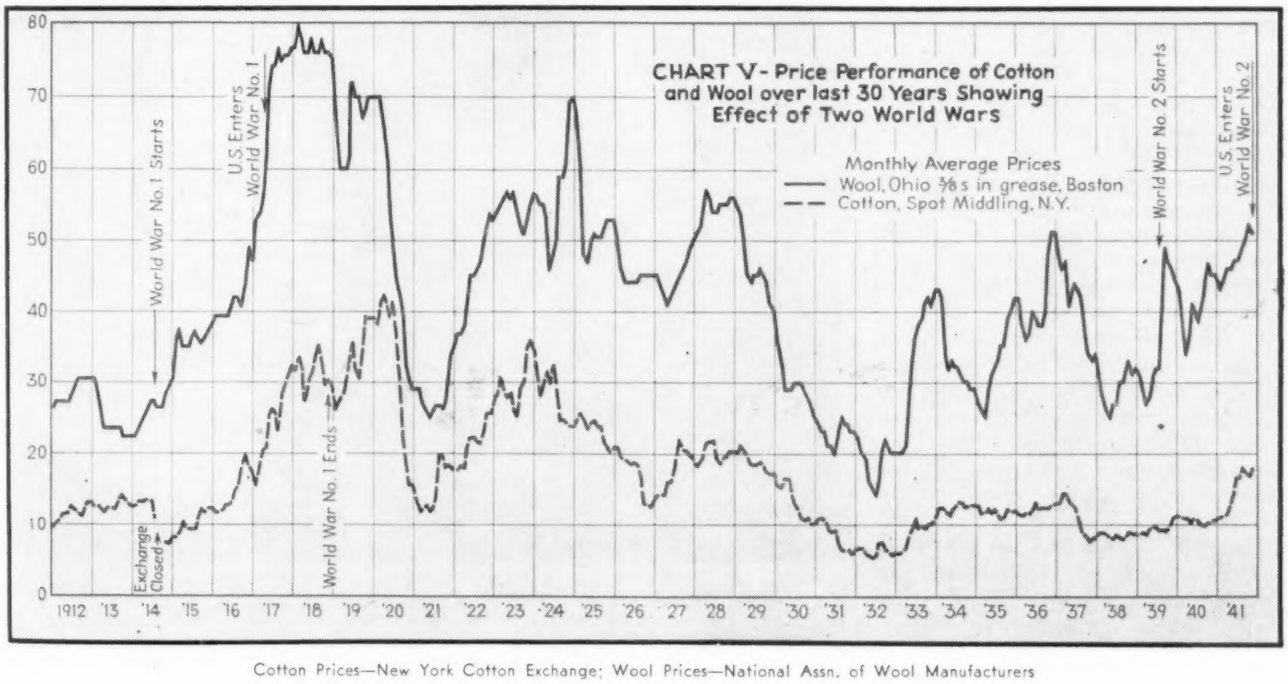


CHART V - Price Performance of Cotton and Wool over last 30 Years Showing Effect of Two World Wars
Monthly Average Prices
Wool, Ohio 3/8 s in grease, Boston
Cotton, Spot Middling, N.Y.
World War No. 1 Starts
U.S. Enters World War No. 1
World War No. 1 Ends
Exchange Closed
World War No. 2 Starts
U.S. Enters World War No. 2
80
70
60
50
40
30
20
10
0
1912 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33 '34 '35 '36 '37 '38 '39 '40 '41

Cotton Prices—New York Cotton Exchange; Wool Prices—National Assn. of Wool Manufacturers

Changes in Technique Shaped by War

REPORTING LAST APRIL on the Southern Textile Exposition, we said "—there never has been a show held under a more critical world and national situation, nor under conditions of greater demand—pressure upon both equipment makers and textile manufacturers. . . . Pressure upon machine shops, upon materials, upon practically all phases of manufacturing, will necessitate ingenuity in the form of both substitution and creative effort." The demand and the pressure have increased during the intervening months—and will continue to increase until victory is won. Government requirements for textiles have taken precedence over all other needs. Girded for war, the textile industry is determined that there shall be no lack of those textiles needed by our armed forces. Gearing up of facilities to deliver the goods at the time and in the quantities needed and keeping productive and auxiliary equipment in running condition are the most important tasks today.

Setting up of priorities for many of the metals and other materials employed in construction of textile mill equipment, diversion by textile machinery builders of part of their facilities to production of munitions, and shortages of various dyes and chemicals have greatly influenced technical developments during the last year. Stoppage of silk imports and the ban on use of silk for civilian purposes had a profound effect on the full-fashioned hosiery division.

With purchases of new textile machinery restricted almost entirely to those essential to production of textiles for military use, there has been little opportunity for introduction of radically new types of equipment. Thus, at the Knitting Arts Exhibition held last spring only one entirely new knitting machine of any type was shown—a multiple-feed sinker-top machine. Exhibited at the Greenville show were several developments in preparatory, spinning, twisting, winding, and weaving equipment, but the number of new machines was much smaller than at previous exhibitions. By the end of 1941, announcements of new types of textile equipment had almost stopped.

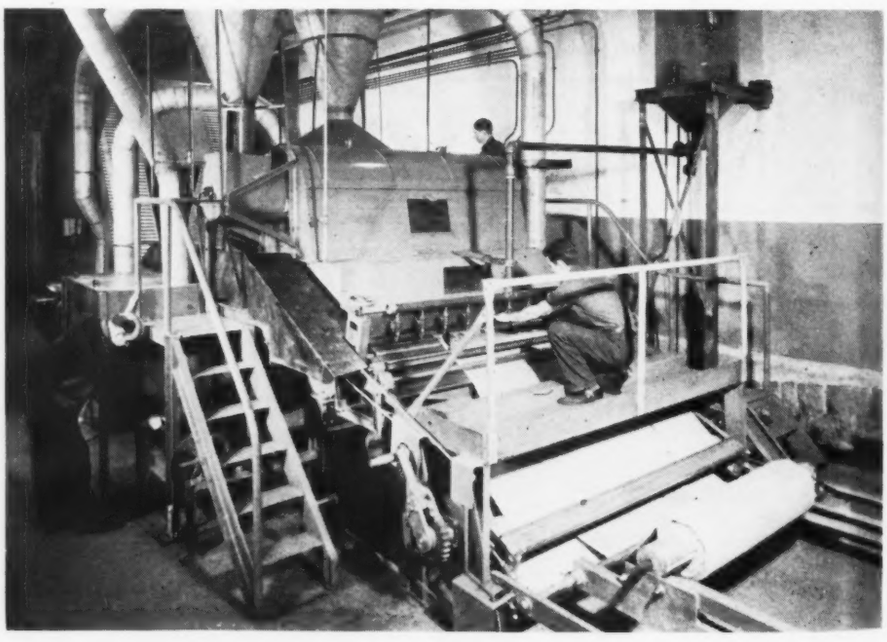
WITH THE SUDDEN BAN on use of silk for civilian purposes, full-fashioned hosiery manufacturers were forced to turn to substitutes. Production of Nylon—the most satisfactory replacement material—is far too small to meet all needs of the full-fashioned industry, and may be restricted to military uses. Hence, hosiery mills are endeavoring to develop various styles of cotton, rayon, and cotton-rayon hosiery and to eke out the supply of Nylon by employing it in conjunction with cotton and/or rayon. From the technical standpoint, use of rayon has given rise to the most serious problems. There is still a lack of real information on the most suitable yarn sizes, twists, courses per inch, and gages for producing rayon full-fashioned hosiery, and on suitable soaking or sizing formulas and procedures for the different types of rayon yarn used in full-fashioned hosiery. However, as throwsters and knitters gain knowledge and experience they undoubtedly will be able to improve the appearance and serviceability of rayon hosiery.

Rationing of rubber has presented another problem to textile manufacturers—knitters particularly—as use of covered-rubber yarns will have to be curtailed sharply, if not eliminated.

Shortage of some dyes and textile chemicals has resulted in a search for substitutes and in efforts to conserve through more efficient use of materials. This subject is dealt with at more length in an article on page 82 of this issue.

The metal shortage has led to some changes in design of textile machinery. More important thus far, it necessitated the establishment of the priorities system, which acted as a brake to the installation of new textile machinery other than that required to complete Government contracts or to make textiles for essential civilian uses. Whereas, numerous companies producing textiles for military purposes have revamped and modernized their plants and installed additional equipment, and thus have increased productive capacity and/or broadened their range of products, firms which do not have priority ratings are finding it increasingly difficult to obtain new machinery. Fortunately, it appears that textile mills will be able to obtain about everything which they actually need in the way of repair parts, supplies, etc.

MAINTENANCE AND REPAIR of textile mill equipment has assumed a position of greater importance than ever before. Added to the fact that machines are being operated at top speed for longer hours, is the growing shortage in the industry of machinists, machine fixers, and other skilled labor. Discussions at recent meetings of operating executives indicate that textile men are



A further step toward elimination of conventional textile operations is a new method of producing floor coverings whereby flock is applied to burlap or

aware of the necessity for proper maintenance of equipment and that they are taking steps to prevent any unnecessary stoppages due to lack of care. Although less acute than in some other industries, the problem of labor shortages is not being ignored. Employment of a higher percentage of women workers, together with more extensive use of hoists, conveyors, control instruments, and other labor-saving devices, can be expected during the coming months.

To date the change-over by mills from production of civilian fabrics to those for military use has been accomplished with comparatively little difficulty. With a large increase in the size of our Army, the demand for uniforms and textile equippage will increase correspondingly. Many mills undoubtedly will be called upon to produce some types of textiles which are new to them. Some method of sharing the knowledge which has been developed on suitable yarn sizes, manufacturing operations, and finishing processes for various types of military textiles would be of benefit to those mills and to the nation.

To conserve wool and other critical materials for war purposes, it will be necessary during 1942 to redesign and simplify certain styles of civilian fabrics. It is not anticipated that this will involve any major technical difficulties. Some adjustments of machines and processes, will, of course, be needed when various changes are made in fiber blends, yarn construction, and fabric designs.

TECHNICAL PROGRESS. The year 1941 was by no means devoid of technical achievements. For example, it witnessed the start in this country of commercial production of fibers from casein. This fiber, known as Aralac, is being produced at the rate of about 5,000,000 lb. a year. Aralac can be blended with wool, mohair, cotton, spun rayon, and other fibers; spun into yarns; and woven or knit into fabrics. Another new textile raw material introduced is Tensylon, a yarn-like rubber hydrochloride product. Just announced for blending with wool is a fiber obtained from the bark of redwood trees. A further step toward elimination of conventional textile operations is a new method of producing floor coverings whereby flock is applied to burlap or another base fabric which has been coated on one side with rubber cement. In a new printing process, direct, acid, alizarine, and other soluble dyes are employed in conjunction with an organic medium.

Launching of a revitalized program inaugurated by Textile Research Institute, Inc., may well prove to be one of the most important events of the year. The new plan, which was made possible by a liaison between the Institute and the Textile Foundation, envisions an extensive program of fundamental and applied research. In this connection should be mentioned one result of the research now being carried out by the Textile Foundation—the development of a process for modifying the wool fiber in such a way as to make it resistant to attack by moths, bacteria, molds; to shrinkage during laundering; to alkalis and sulphites, and to ageing by sunlight.

An interesting theory proposed last year is that sun-spot disturbances have an effect on the strength and other properties of textiles and on textile manufacturing operations; much correlated research is needed on this subject to determine if and how sun spots and ionization of air affect textile fibers.

A bottleneck in many cotton mills is the card room. Increasing card cylinder speeds in several southern mills to increase production had an unexpected result—an increase in yarn strength. To increase dryer production, use of booster units has been adopted in a large number of plants. Some of the units are gas fired; others are infra-red drying lamps; still others are gas-burning infra-red units.

AMONG NEW MACHINES announced during the year are a cotton comber with several advanced features; a high-draft roving frame which makes possible a draft range up to 35 in one operation direct from drawing frame sliver; a drawing frame designed to give double the production of conventional drawing; a cotton twister of the wet or dry type with 9-in. traverse; a new twister creel; and two heavy cotton looms which operate at higher speeds than previous models. New also are a woolen ring spinning frame; a spring-tension type warp compressor; and a filling mixer which allows six different weaving arrangements.

Equipment designed especially for handling rayon staple includes a roller-card conversion for revolving flat cards; a drafting system for drawing frames and speeders for 7/8- to 3-in. staple; a roving frame for staples 1½ to 3 in. long; and drafting assemblies for spinning frames. New knitting mill equipment not mentioned above includes a 32-section full-fashioned hosiery machine; a seamless sleeve transfer knitting machine; a knitting-weaving machine; a hosiery seamer; an automatically lubricated lockstitch machine; and a hosiery inspection system. Among other noteworthy developments are an automatic filling winder, a Nylon sizing machine, a redrawing machine, a double-end skein reel for reeling fine-count yarns; two direct-drive beamers—one a section beamer and the other a beam warper; and a yarn conditioner.

Some twenty new dyeing and finishing machines were announced, as well as a rotary screen printing machine of novel design. Typical of these developments in finishing machinery are a detwisting machine for eliminating excess twist in fabrics being run into a

another base fabric which has been coated on one side with an adhesive; photographs show equipment for applying flock, and sample of product

scutcher for opening up and folding; improved piece dyeing machines; a micro-set padder designed to give accurate control of pressure up to 10,000 lb. on each side; a stroboscopic inspection system for application to high-speed printing machines; a horizontal-type cloth dryer equipped to maintain graduated temperature zones and thus prevent over-drying; an electrically heated dryer; a heavy-duty friction calender; a finishing machine for brushing, napping, pile raising, and sueding knit goods; a calender and folder for knit goods; a cloth conditioner; a duplex sewing and winding machine; a doubling and tacking machine; a vertical-knife shear, a slitting and rewinding machine; and a uniform-tension unwinding machine.

Improvements and refinements have been made in several other types of equipment and a number of attachments for existing machines have been announced. Among the latter are a redesigned equalizer for woolen cards which takes the place of the usual intermediate feed; a roller-bearing doffing comb for woolen, worsted, and cotton cards, as well as for garnett machines; interlocking metallic rolls for cotton roving frames; a bunch builder for spinning frames; a new type of spinning-frame scavenger roll; a looper attachment for removing half stitches after trimming of coarse-gage work; a duplex take-over for dyeing machines; and a return air condenser for use in conjunction with flock removal systems on nappers, shears, and pickers.

Considerable progress was made during 1941 in the development of new and improved test methods and equipment. Among the new testing devices are: a fabric permeator for determining permeability of fabric to gases; an instrument for evaluating the pliability of woven fabrics; a gloss meter; a color matching instrument designed to facilitate quick comparison of colored samples; an improved abrasion tester for determining resistance to abrasion of woven and knitted fabrics; a fiber-length measuring instrument; a tension presser for determining shrinkage reactions in woven fabrics; and improved equipment for testing fastness to light and laundering.

Developments in mill engineering equipment include improvements in fluorescent lamps and fixtures, lubricating systems, and drives. One new lubricating system, for example, is designed to deliver a predetermined quantity of lubricant to from 3 to 20 bearings; also new is a spindle oiling machine designed to maintain proper oil level in ring spinning and twister spindle bolsters. Among new power-transmission equipment are a constant-tension drive for dyeing machines which provides constant cloth speed and uniform tension; a 10-to-1 adjustable-speed a-c. drive which uses a series circuit without the usual exciter; a V-belt designed around a cog construction principle on the inner surface of the belt; a totally inclosed friction-clutch; a multiple-disk clutch; and a variable sheave for spinning machines and other equipment.

The year 1941 witnessed the start in this country of Aralac, a synthetic fiber derived from casein; photograph shows one of operations in its manufacture

NEW CHEMICALS introduced during 1941 included an olive oil substitute; two rayon yarn lubricants; a fiber lubricant for use in carding and spinning woolen and worsted yarns; a line of oil-soluble fugitive tints for identifying rayons; a synthetic resin for use in warp sizing; two de-sizing and softening agents; a scouring agent said to eliminate the second rinsing process in fulling and scouring wool goods; a synthetic detergent which eliminates scouring or kier boiling of certain rayon and cotton fabrics; and another synthetic detergent consisting of a combination of sulphonated compounds and high-molecular-weight aldehyde condensates.

Among new products for use in dyeing and printing are: a substitute for tartar emetic for mordanting textiles; a wool dyeing assistant designed to promote penetration and protect the fibers; a reserving agent for animal fibers for use in dyeing union fabrics; a synthetic resin printing paste for use in roller or screen printing; two bases for use in preparing pigment printing pastes; a line of new acetate dyes introduced by one of the manufacturers of acetate rayon; and a universal indicator for textile fibers.

New finishing compounds included a synthetic wetting agent with good wetting-back properties; a finishing agent for producing water-repellent and abrasive-resistant finish on wool goods; several types of resin emulsion finishes for woven and knitted fabrics; a chemical for use in a cold process for weighting cotton underwear fabrics; a water-repellent agent applied by the one-bath method; a high-quality potato starch said to be equal to the best starches formerly imported from Holland and Germany; three starch derivatives for use in warp sizing and finishing; a mold and mildew preventive; and a mothproofing compound which withstands laundering and dry cleaning.

TEXTILE WORLD'S TEXTILE WAR MANUAL

IN THIS TEXTILE WAR MANUAL facts have crowded out opinions. Those facts, we know, are what our readers want. They want to know, first of all, how they can best aid the all-out war effort. They want to know, second, how they can keep their plants and employees busy. They want to know, third, how they can protect their plants against sabotage and air-raid damage, and their employees against the inevitable dislocation which an ever-increasing shift from civilian to military production will entail.

For they see clearly that this is no mild change American industry is facing. They recognize it as an upheaval, a revolution. They know that they will be called upon to discard all previous notions; to adopt the single idea of victory as their creed; to subject themselves to rules and regulations and prohibitions foreign to their nature as American individualists.

They accept that dictum gladly, just as the boys in the service have accepted it.

All they want, in the doing of their job, is facts.

That is what this Manual gives them.

WE HAVE TRIED to make it a reference-work, a looking-up place.

In its pages, we have indicated:

1. What Government agencies buy what textiles, and where, and how.
2. What specifications apply to what goods.
3. What tests are used in evaluating fabrics for military use.
4. What the priority system means to textile manufacturers.
5. What OPA means in the way of price ceilings.
6. How to protect one's plant and employees.
7. What conservation, simplification, and substitution mean to the textile industry.
8. What chances there are, for textile companies, in the form of sub-contracting.
9. What to do about dislocation of labor.
10. What the Textile Sections of the Government departments are trying to do.

WE HAVE SAID that we have tried to *indicate* all this in this Textile War Manual. *Indicate* is the word. If we tried to *tell* it all, we would need a series of volumes.

This Manual is really an index. It tells you where to go for further information.

More than that, it is a work-sheet. Everything in it is subject to constant change during 1942.

For knowledge of the changes in store, we direct you to the pages of TEXTILE WORLD in the months to come. This publication has set an enviable record, since the start of the defense program, in supplying complete and up-to-date information concerning the impact of that program upon the business of running a textile mill. We plan to continue that service during the war program—only more so.

Furthermore, we invite your questions. If you are not sure where to go for further information, specifications, advice, ask us. If we don't know, we'll find out, and then let you have the answers.

If you want reprints of any parts of the invaluable series on "Fabrics for Military Use," write to us, and we'll supply them.

We'll be busy this year—but never too busy to follow up this Textile War Manual with supplementary information.

When in doubt, ask TEXTILE WORLD.

MAJOR CREDIT for the compilation of the material in this Manual goes to Blaine Stubblefield, of our Washington office, and to Winn W. Chase, William B. Dall and Gordon B. M. Walker, of our editorial staff. They did a complicated job, under particularly difficult circumstances.

Douglas G. Woolf

How to Obtain Government Contracts

TO MEET THE INCREASING DEMAND for textiles by the Government, many mills which heretofore have done little or no work on Government contracts will find it necessary to devote at least part of their facilities to production of textiles for military purposes. Other mills now producing a limited range of textiles for the Government will have to produce a wider range of products. Still other mills may merely increase production of types which they are now manufacturing. Although the Army and the Navy are the largest purchasers, nearly every department of the Government buys some textiles. This section of the Textile War Manual tells textile manufacturers: (1) Who Buys Textiles, (2) What Type of Textiles Are Purchased, and (3) How to obtain Government contracts.

I. PURCHASING AGENCIES

A. U.S. ARMY

1. Quartermaster Corps—Purchases most all types of textiles used by two or more branches or services

a. Philadelphia Quartermaster Depot, 21st and Johnson Sts., Philadelphia—Purchases cloth, clothing, blankets, etc.

b. Jeffersonville Quartermaster Depot, Jeffersonville, Ind.—Purchases tentage and equipage

2. Air Corps—Wright Field, Materiel Division, Dayton, Ohio—Purchases textiles for aeronautical use

3. Medical Department, Washington, D. C.—Purchases hospital supplies, etc.

4. Corps of Engineers, Washington, D. C.—Purchases sandbags, camouflage cloth, etc.

5. Ordnance Department, Washington, D. C.—Purchases cartridge bags, wiping cloth, etc.

6. Signal Corps—Purchases miscellaneous textiles

7. Chemical Warfare Services, Edgewood, Md.—Purchases gas-proofed and other special textiles.

8. Coast Artillery Corps, Washington, D. C.—Purchases miscellaneous textiles

B. U.S. NAVY

1. Bureau of Supplies and Accounts, Washington, D. C.—Purchases uniform cloth, blankets, etc.

2. Bureau of Aeronautics, Washington, D. C.—Purchases textiles for aeronautical use

3. Bureau of Medicine and Surgery, Washington, D. C.—Purchases hospital supplies, etc.

4. Bureau of Navigation, Washington, D. C.—Purchases miscellaneous textiles

5. Bureau of Ordnance, Washington, D. C.—Purchases miscellaneous textiles

6. Bureau of Ships, Washington, D. C.—Purchases miscellaneous textiles

7. Bureau of Yards and Docks, Washington, D. C.—Purchases miscellaneous textiles

C. U. S. MARINE CORPS

1. Marine Quartermaster, 1100 South Broad St., Philadelphia—Purchases all textiles for Marine Corps

D. U.S. TREASURY DEPARTMENT

1. Procurement Division, Washington, D. C.—Purchases nearly all textiles required by U. S. Department of Interior, U. S. Post Office Department, U. S. Department of Commerce, U. S. Department of Agriculture, U. S. Veterans Bureau, U. S. Maritime Commission, National Youth Administration, Works Progress Administration, Emergency Relief Administration, American Red Cross, etc. Some of the purchases for the Procurement Division are made by State and Regional Procurement Offices.

E. DEFENSE SUPPLIES CORP., 33 Liberty St., New York—Purchases osnaburgs for sand bags and duck.

F. BRITISH PURCHASING COMMISSION, Washington, D. C.—Purchases some textiles.

II. TYPES OF TEXTILES PURCHASED

Major types of textiles purchased are classified and indexed below. Data given include type of textile, construction, and specification number. Certain other textiles are purchased occasionally or in relatively small quantities, and are listed in one or more of the indices of specifications described in the section of this manual dealing with specifications. In the tables below the following abbreviations are used:

blchd	bleached	sgd	singed
cmb	combed	shr	shrunk
crd	carded	shrd	sheared
f	filling	wln	woolen
merc	mercerized	w	warp
s	single yarn	wstd	worsted

The character of each specification is indicated by the capital letters in parentheses preceding the specification number:

F	Federal Specification
A	U.S. Army Specification
AC	Army Air Corps Specification
M	Marine Corps Specification
N	Navy Specification

Purchasing agencies are indicated as follows:

PQ	Philadelphia QM Depot
JQ	Jeffersonville QM Depot
WF	Army Air Corps, Materiel Div.
Med	Army Medical Department
Eng	Army Corps of Engineers
Chem	Army Chemical Warfare Serv.
MQ	Marine Quartermaster
A	Navy Bureau of Aeronautics
C	Navy Bur. of Construction and Repair
M	Navy Bur. of Medicine and Surgery
N	Navy Bureau of Navigation
O	Navy Bureau of Ordnance
S	Navy Bureau of Supplies and Accts.
Y	Navy Bureau of Yards and Docks

Certain of the textiles listed have been described in greater detail in previous issues of TEXTILE WORLD. Date of issue in which descriptions appeared is given in the last column of each table under the heading TW. Tables begin on next page.

TEXTILE WAR MANUAL PURCHASES

A. COTTON FABRICS, WOVEN

Textile	Construction and Characteristics	Yarns	Bought by	Spec. No.	T.W.
Airplane cloth	36–90 in., 80x80, 4.0 oz., chem. neut., 1½" cotton	2-ply cmb. merc	WF, AOS	(F)AN-CCC-C-399	5/41
Balloon cloth	5 types, 80x80-120x120, 40½-54½, 1.40-5.60 oz..	s & ply cmb	WF	(A)6-39-G	.....
Balloon cloth	4 types, 42&53 in., 80x80-120x120, 2.05-5.60 oz.	s, 2-ply	AOS	(N)27C13(INT)a	.....
Broadcloth	130x64, 3.2 oz., merc, fully blchd, no size	s or 2-ply cmb	PQ	(A)6-188B	.....
Bunting	18&36 in., 32x31 & 31x30, 3.2 & 4.5 oz., sgd, merc.	s cmb	PQ, CS	(F)CCC-B-791a	.....
Canvas, 6-oz.	24 in., 42x25, black	s crd	S	(N)27C26	.....
Canvas, padding	5.8-10.6 oz., 20-58x20-45, unfinished	singles	PQ	(A)14-6	.....
Chambray	36 in., 68x48-58, 4.1&5 oz./sq. yd. colored warp	s crd	S	(F)CCC-C-231	.....
Cloth, cotton	Types I&II, 36-40 in., 28-54x24-56, 3.15-6.30 yd.	s crd	PQ	(A)6-109B	.....
Cloth	40&41½ in., 80x80, 4.0-9.0 oz., sgd, desized	s&2-ply cmb	PQ	(A)6-269	.....
Cloth, 6¾-oz.	36 in., 112x52, sgd, merc, shr, w-repel, OD	s wln	PQ	PQD No. 127	.....
Cloth, 16-oz.	36 in., 54x42, fast gray color, waterproofed	.....	A	(N)M-2816	.....
Cloth, jungle	2 types, 36 in., 50x310&56x312, 8&13 oz.	s cmb	AS	(N)27C22c	.....
Damask, table	Types A-F, 58-72 in., 56x50-78x78, 4.4-5.5 oz.	s crd	PQ,S	(F)CCC-D-71	.....
Denim, unshrunk	Classes A-D, 28 in., 61-71x39-46, 1.6-2.2 yd.	s crd	PQ	(F)CCC-D-156a	3/41
Drill, 7-oz.	35 in., 74x56, 2/1 tw., OD, unblchd	s crd	PQ,S	(F)CCC-D-651	12/41
Drill, 7½-oz.	36 in., 74x60, 2/1 tw., unbl., fully shr.	s crd	PQ	(A)6-247	.....
Drill, 7½-oz.	39 in., 116x56, 3/1 tw., vat-dye, sgd, merc, shr	2-ply cmb	S	(N)27D8A	.....
Drill, 7½-oz.	Types A&B, 29&32 in., 100x50, 3/1 tw., sgd, blchd	cmb w, crd f	SC	(N)27D5C	3/41
Drill, 7½-oz.	Types C&D, 29&32 in., 100x54, 3/1 tw., sgd, blchd	cmb w&f	SC	(N)27D5C	3/41
Drill, 4¾-oz.	Type E, 35 in., 100x60, 3/1 tw., sgd, blchd	cmb w&f	SC	(N)27D5C	3/41
Drill, 7.7-oz.	28½, 36, 40 in.; 112x54, 3/1 tw., sgd, blchd, merc	combed	MQ	(M)11/22/37	.....
Duck	6-15 oz., 72x25-86x30, pl-fill&flat, 30¼-31¼ in.	s&2-ply	JQ	(F)CCC-D-761	.....
Duck	7.9-15.5 oz., 28½-33 in., 42-62x31-54, w-repel.	2&3-ply w&f	JQ,CAOSY	(F)CCC-D-771a	11/40
Gauze, plain	7 types, 36-38½ in., 20x12-44x40, 9.7-26.4 yd.	s crd	Med,MS	(F)CCC-G-101a	.....
Italian, 4.8-oz.	32&36 in., 78x126, 1/4 tw., sgd, merc	s cmb	MQ	(M)1/26/38	.....
Jean, 4.8-oz.	36 in., 98x60, 2/1 tw., fully blchd	s crd	PQ	(F)CCC-J-191	.....
Leno, 1.5 oz.	20-30 ends/in., 42-45 picks, 35-48 in., 3-pick	s crd	PQ	PQD No. 17	5/41
Lining, 4.5-oz.	32 in., 50x44 (40-in., 48x48 sheeting)	s crd	PQ	(A)6-291	.....
Muslin	Types I&II, 36 in., 85x72&64x56, 3.1&2.4 oz., blch	s crd	PQ,Med	(F)CCC-M-911	.....
Nainsook	35½ in., 90x84, 3.3 oz.	s crd	S	(N)55N1b	.....
Osnaburg	Classes A-E, 29½-39½ in., 32-40x28-32, 7-8 oz.	s crd	Eng	(A)6-280A	.....
Percale	36 in., 85x75, 3.1 oz., vat-dyed, fully shr	s crd	PQ,CS	(F)CCC-P-191	8/41
Pillow tubing	42 in., 74x66, 4.6 oz., 36 & 38½ in. lengths	s crd	PQ,MQ,CS	(F)DDD-P-351	.....
Poplin, 4-oz.	34–40 in., 100x44, blchd, merc, shr	s crd	PQ	in invitation	.....
Poplin, 5-oz.	Type II, 36 in., 106x52, OD vat, sgd, w-repel	cmb s&2-ply	PQ	PQD No. 1	8/41
Print Cloth	38½ in., 64x60, 5.35 yd., sulphur OD, w-repel	s crd	PQ	PQD No. 7	.....
Print Cloth	39 in. 80x80, 4 yd., sulphur OD, w-repel	s crd	PQ	PQD No. 7	.....
Sheeting, 4-oz.	60x56, sulphur OD	s crd	PQ	(A)ten.10/31/40	.....
Sheeting, Narrow	31-40 in., 44x40 to 56x60, 3.4 to 5.3 oz., unblchd	s crd	PQ,CS	(F)CCC-S-281	.....
Sheeting, wide	42-90 in., 74x66, 4.6 oz., blchd	s crd	PQ,MQ,CS	(F)CCC-S-271	.....
Sheeting, wide	48-90 in., 68x72, 4.7 oz., unblchd	s crd	PQ,MQ,CS	(F)CCC-S-291	.....
Shirting	35½ in., 104x42, 3¾ oz., Oxford weave, merc, OD	s cmb	MQ	(M)4/18/34	.....
Silesia, 4.4-oz.	36 in., 84x84, 2/1 tw., fast colors as spec.	s crd	MQ	(M)1/29/34	.....
Silesia, 4¾-oz.	35½ in., 72x72, fast black	s crd	S	(N)55S7a	.....
Silesia, 5-oz.	36 in., 72x74, 1/2 tw., OD or tan, sgd, merc.	s or 2-ply	PQ	(A)6-18C	11/41
Suiting, 7.7-oz.	28½, 30, 40 in.; 112x54, 3/1 tw., OD vat	s cmb	MQ	(M)11/22/37	.....
Twill, h'bone	36-42 in., 72x46, 8.5 oz., 3-har., vat dyed	s crd	PQ	(A)6-261	9/40
Twill, h'bone	36&40 in., 100x52, 9 oz., 1/3 tw., fully shr., OD	s crd	MQ	(M)2/1/40	.....
Twill, 4.4-oz.	32 in., 78x126, 1/4 tw., OD vat, sgd, merc, shrein	cmb s or 2-ply	PQ	(A)6-100B	.....
Twill, 5-oz.	36 in., 78x126, 1/3 tw., black, sgd, merc	s crd	S	(N)27L6	.....
Twill, 6-oz.	35½ in., 114x54, 3/1 tw., clear tw. line, vat-dyed	cmb s or 2-ply	PQ	PQD No. 95	1/42
Twill, 8.2-oz.	Type I, 28–57 in., 116x56, sgd, merc, shr, OD vat	cmb 2-ply	PQ	PQD No. 33A	9/40
Twill, uniform	Type II, 28-57 in., 116x56, sgd, merc, shr, OD vat	cmb s&2-ply	PQ	PQD No. 33A	.....
Twill, uniform	Type III, 28-57 in., 90x54, sgd, merc, shr, OD vat	cmb s&2-ply	PQ	PQD No. 33A	.....
Twill, uniform	Type IV, 28-57 in., 116x56, sgd, merc, shr, OD vat	crd s or 2-ply	PQ	PQD No. 33A	.....
Twill, uniform	Type V, 28-57 in., 116x56, sgd, merc, shr, OD vat	cmb 2-ply	PQ	PQD No. 33A	.....
Twill, 5-oz.	Type I, 36in., 185x92, 2/2tw., OD vat, sgd, w-repel	cmb s&2-ply	PQ	PQD No. 1	8/41
Towels, bath	22x44 in., 96x48, 8.63 lb./doz., woven-in name	s&2-ply	Med	(A)6-152A	.....
Towels, huck	18x36 in., 71x60, 2.83 lb./doz., woven-in name	s&2-ply	Med	(A)6-153A	.....
Towels, huck	17x36 in., 52x26, 2.55 lb./doz., woven-in name	s or 2-ply	PQ, Med, S	(F)DDD-T-531	.....
Towels, turkish	17x22 in., 68x32 & 84x42, woven-in name	s&2-ply crd	PQ,MQ,MS	(F)DDD-T-551	.....

Among other cotton fabrics purchased are: camouflage netting, (A) 6-70 B, by Eng; canton flannel, (F) CCC-F-451, by Med, S; cheesecloth, (F) CCC-C-271, by Eng, S; corduroy, by S, Emergency Relief Administration; gingham, (F) CCC-G-391; outing flannel, (F) CCC-F-466; seersucker PQD No. 8; whipcord, 16-oz., (A) 8–55A, by Emergency Relief Administration; ticking, (F) FF-T-311, by S; and wiping cloths, (F) DDD-C 477 by Chem, S.

B. WOOLEN AND WORSTED FABRICS, WOVEN

Textile	Construction and Characteristics	Yarns	Bought by	Spec. No.	T.W.
Barathea, 16-oz.	56 in., 80x84, 76's to 80's wool, OD, 8-har. weave	2-ply wstd	PQ	(A)8-64	.....
Blanket, 1½-lb.	72 in., 22-25x22-25, 56's wool	s wln	PQ	PQD No. 85A	.....
Blanket, 3¾-lb.	Types I&II, 66 in., 28x30, 2/2 br.tw., 56's wool	s wln	PQ	(A)8-111B	.....
Blanket, 4-lb.	4 types, 60-72 in., 34x34-40x44, 2/2 tw., 56's wool	s&2-ply	CMS	(N)27B7c	.....
Bunting	19-36 in., 32x32, 4 oz., fast colors	2-ply wstd	PQ,CS	(F)CCC-B-801	.....
Cloth, uniform	3 types; 16-22-28-oz.; 60x58-90x70; st-dye 70's	single	S	(N)27C19a	.....
Covert, 12½-oz.	56 in., 70x56, 3/2 steep tw., fast blue, 64's wool	s wln	PQ	(A)8-122	.....
Doeskin, 26-oz.	56 in., 78x48, 5-har. satin, OD, 64's wool	s wln	PQ	PQD No. 30	7/41
Elastique, 18-oz.	56 in., 116x76, steep tw. (dobby), OD, 64's wool	s&2-ply	PQ	(A)8-109	11/41
Elastique, 18-oz.	56 in., 124x80, steep tw. (dobby), OD, 64's wool	2-ply wstd	PQ	PQD No. 32	11/41
Elastique, 24-oz.	56 in., 96x88, steep tw., OD, 64's wool	s&2-ply wstd	PQ	(A)8-95A	.....
Facing, 16-oz.	56 in., 62x60, sheared, pressed, 64's wool	s wln	PQ	(A)8-43B	.....
Flannel, 8½-oz.	54 in., 72x66, 2/2 tw., st-dye khaki, 58's wool	s wstd	MQ	(M)10/12/26	.....
Flannel, 10½-oz.	56–58 in., 68x68, 2/2 tw., OD, 60's wool	French wrstd	PQ	(A)8-54B	10/41
Flannel, 11-oz.	56 in., 56x48, 2/2 tw., st-dye dk blue, 60's wool	single	S	(N)27F8b	.....
Flannel, 13-oz.	54 in., 50x50, 2/2 tw., st-dye green, 60's wool	s wln	MQ	(M)5/10/38	.....
Kersey, 16-oz.	54 in., 60x58, 2/2 br. tw., st-dye, 60's wool	s wln	MQ	(M)2/14/35	.....
Kersey, 22-oz.	54 in., 50x55, 2/2 tw., st-dye green, 60's wool	s wln	MQ	(M)1/29/34	.....
Kersey, 30-oz.	55 in., 70x60, st-dye dk blue, 60's wool	single	S	(N)27K2b	.....
Lining, 12-oz.	56 in., 38x32, 60's wool blend, OD, felted, shrd	s wln	PQ	PQD No. 59	9/41
Lining, 30-oz.	56 in., 36x36, 3/3 tw., reproc. 50's, OD	s wln	PQ	PQD No. 124	.....
Melton, 16-oz.	55 in., 62x56, 2/1 tw., st-dye dk blue, 64's wool	single	S	(N)27M10b	.....
Melton, 32-oz.	56-58 in., 36x36, 55% 44's, 10% 58's, 35% noils	s wln	PQ	(A)8-53	2/41
Serge, 14-17 oz.	56 in.; 80x70, 80x78, 68x64, 104x84	from 70's wool	S	(N)27S10a	.....
Serge, 10½-oz.	56 in., 82x72, 2/2 tw., OD, shrd, 64's wool	2-ply wstd	PQ	PQD No. 31	9/41
Serge, 18-oz.	56 in., 68x56, 2/2 tw., OD, shrd, 64's wool	2-ply wstd	PQ	(A)8-94A	8/40
Shirting, 10½-oz.	56 in., 52x42, OD, shrd, 60's wool	2-ply wstd	PQ	(A)8-110	12/40
Suiting, 20-oz.	56 in., 46x44, 2/2 tw., shrd, 50's wool blend	s wln	PQ	PQD No. 88	7/41

C. KNIT GOODS, COTTON AND WOOL

Textile	Construction and Characteristics	Yarns	Bought by	Spec. No.	T.W.
Anklets	circ., 1x1 rib, 12x20, 20 oz./doz. pr.	2-ply wstd	PQ	PQD No. 107	.....
Bobbinet	52&72 in., 196 meshes/sq. in., 1.5 oz./sq. yd.	2-ply crd	PQ,CS	(F)JJ-N-191	.....
Cap	circ., half-cardigan, 7x15, 7 in. dia., 50's wool	2-ply-wstd	PQ	PQD No. 87A	.....
Cap	circ. or flat cardigan, 6x12, 3½ oz. each	2 or 3-ply wstd	S	(N)73C3a	.....
Drawers	Cotton, merino&wool; 12-24 wales, 20-30 courses	s or 2-ply	PQ,MQ,S	(F)JJ-D-653	4/41
Drawers, cotton	flat knit, 30x32, ankle length	cmb	PQ,MQ	(F)JJ-D-641	.....
Drawers	1x1 rib, 14x20, 25 or 50% wool, sizes 32-46	s merino	PQ	PQD No. 74	.....
Gloves	full-fash., seamles, 68-72 needles	3-ply wln	S	(N)73G2a	.....
Gloves, woolen	Sizes 8-11, 4 in. cyl., 64 needles, 56's wool	3-ply wln	PQ	(A)8-60A	6/41
Jerseys	Sizes 32-44, baby-shaker, 196-280 needles, 56's	2-ply wstd	S	(N)55J2h	.....
Lining, 22½-oz.	54 in., OD, napped both sides	woolen	PQ	(A)8-118	10/40
Lining, 26-oz.	54 in., const. not spec., reproc. 50's, OD	s wln	PQ	PQD No. 122A	.....
Mufflers, 8½-oz.	1x1 rib, 6x11, 12x64 in., 56's wool, OD	2 ends, 2-ply	PQ	(A)8-99A	.....
Socks, cotton	3½-3¾ in. cyl., 176-220 needles, 26-30 courses	cmb & merc	PQ,MQ,S	(F)JJ-S-566a	.....
Socks, cotton	3½-3¾ in. cyl., 84 needles, 16 courses	carded	PQ,MQ,S	(F)JJ-S-566a	.....
Socks, pt. wool	Class A, 3½-3¾″ cyl., 160 needles, 25 courses/in.	merino&cmb cot	PQ,MQ,S	(A)JJ-S-581a	4/41
Socks, worsted	Class B, 3¾-4″ cyl., 126 needles, 17 courses/in.	2-ply wstd	PQ,MQ,S	(A)JJ-S-581a	4/41
Socks, pt. wool	Class C, 4-4½ in. cyl., 68 needles, 10 courses	merino&cmb cot	PQ,MQ,S	(F)JJ-S-581a	4/41
Stockinet	Types I&II, circ. or flat, 3-54 in., 16-24x24-36	12/1-28/1	Chem	(A)6-51B	.....
Sweaters	Types I, II, III; Circ., 1x1 rib, 5x10, 5 or 6 ends	2-ply wstd	PQ	PQD No. 111	.....
Toque	circ. or flat, 1x1 rib & half-cardigan, 56's wool	2-ply wstd	PQ	PQD No. 86A	.....
Tubing, 13-oz.	1x1 rib, 12x18, 18-30 in. double width	2-ply wstd	PQ	PQD No. 108	.....
Undershirts	1x1 rib, 14x20, 25 or 50% wool, sizes 34-36	s merino	PQ	PQD No. 73	.....
Undershirts	sizes 34-46, sleeveless, flat or rib, 30x35	s cmb	PQ	(A)6-233B	8/40
Undershirts	circ., 30x32, short sleeves, shrunk	s cmb	PQ,MQ,S	(F)JJ-U-513	.....
Undershirts	circ. flat or rib; cotton, merino, wool; 12-24x20-30	s or 2-ply	PQ	(F)JJ-U-517	4/41
Warp-knit, wool	58-62 in., 21 oz.,0.165 in. thick, nap both sides	single	WF	(AC)16095	.....
Wristlets	circ., 1x1 rib, 12x20, 12 oz./doz. pr.	2-ply wstd	PQ	PQD No. 107	.....
Wristlets	circ. rib, 12x20, 10 oz./doz. pr., 56's wool	2-ply wstd	PQ	in invitation	.....

Among other wool fabrics purchased are: blankets, (F) DDD-B-421a, by Procurement Division of the Treasury Department; shirting flannel, 10-oz., (A) 8–54B, by Emergency Relief Administration.

TEXTILE WAR MANUAL PURCHASES

D. MISCELLANEOUS TEXTILES

Textile	Construction and Characteristics	Yarns	Bought by	Spec. No.	T.W.
Braid, cord-edge	30-end core & covering of cotton, rayon outer	s crd & cont. fil	PQ	(A) 7-15A	.....
Braid, elastic	¾ in., 49 car. mch., 24 w. rubber yn, 60 ppi	2-ply & rubber	PQ	in invitation	.....
Braid, mohair	½ in., 37 car. mch., 28 oz., 12 warps, 26 picks	2/30, 2/32, 2/40	PQ	(A) 7-11	.....
Burlap	Jute, 40 in., 8x8 to 13x13, 7.2 to 10.8 oz.	single	PQ, MQ, CSY	(F)CCC-B-811	.....
Cloth, silk	36 & 50-72 in., up to 10 oz., plain or basket	silk	OS	(N) 27C4b	.....
Cloth, Synthetic	36 in., 2/1 tw., 1.5 oz., const. to meet spec.	high-strength	WF	(AC)16103	.....
Cordage, Nylon	Types N1-N4, 32-car. mch., 3-ply core, 70-275 yd.	Nylon	WF	(AC)16111	.....
Cordage, silk	32-car. mch., 4-7 end core, 70-275 yd., 100-450 lb.	3-ply	WF	(A)7-12-D	.....
Cord, Nylon	4 & 7 end ply-yarn cores, 16 & 32 car. mch., 18-21 ppi	3-ply	A	(N)M-518	.....
Cord, hat	18-end core, merc binder, rayon outer	rayon & plycot	PQ	(A)34-8B	.....
Cord, sash	Types A & B, sizes 6-12, 225-560 lb. str.	carded	PQ, CSY	(F)T-C-571a	.....
Felt, pressed	45-100% wool, 48's-64's grade; 36-72 in., 6-131 oz.	.....	WF	(A)8-15E	12/41
Laces, legging	9-strand braided, 8 ends/strand, 8 st./in.	2-ply crd	S	(M)72L2	.....
Lining, rayon	40-41 in., 182x70, 5 oz., 5-har. w. satin, OD	Cont. fil.	PQ	(A)7-19	9/41
Padding, 5.5-oz.	35-in., 36x28, pl. weave, fully shr, perm. finis	s flax & cotton	MQ	(M)10/31/41	.....
Padding, 7.2-oz.	45x32, pl. weave; cotton, hair & rayon; unblchd	singles	MQ	(M)6/27/40	.....
Parachute cloth	36 in., pl. or 2/2 tw., const. to meet requirements	silk	AOS	(N)27S9e	.....
Parachute twill	36-37 in., 1.6 oz., 2/1 tw., const. to meet spec.	silk	WF, A	(F)AN-CCC-S-371	.....
Tape	¼-1 in., 7-30 ends, 20 ppi., 16-67 oz./gross	20/3/4, 24/2 cmb	WF,A	(F)AN-DDD-T-91	.....
Tape	¼-1¼ in., 28x40 to 135x40, 2/2 h'bone tw.	20/1 & 30/1	PQ, MQ	(F)DDD-T-86	.....
Tape, ⅜-in.	41 carriers, 25 picks, 9 oz., blchd	2-ply crd	PQ	(A)6-258A	.....
Tape, cotton	3/16-1 in., 25-94 ends, 28-70 ppi., plain & tw.	s & 2-ply	SC	(N)27T11a	.....
Tape, silk	1 in., 33x11, 85-110 yd., sp. silk warp, cot. fill	2-ply	WF	(A)7-13-F	.....
Thread, cotton	4, 6, 11 ply cmb (single yarns approx. 8-16's)	.....	A	(N)T-82	.....
Thread, cotton	Mch., basting, heavy threads, 520-25, 750 yd./lb.	2-10-ply	JQ, PQ, CAOS	(F)V-T-276b	.....
Thread, Fortisan	3-cord, Z tw., 11,500 or 5,100 yd./lb.	.....	A	(N)M-527	.....
Thread, linen	3-cord, lock-stitch-twist, hand-shoe threads	3's to 60's	WF	(F)V-T-291a	.....
Thread, silk	Mch. twist, b'hole tw., sewing, embroidry type	ply & cord	JQ, WF, CAOS	(F)V-T-301	.....
Thread, Synthet.	3- & 5-ply, 4-10 turns Z, 1,200 to 5,600 yd.	.....	WF	(AC)16117	.....
Webbing	Types I-VI, ½-7 in., 70 to 4,500 lb. str.	plied crd/cmb	PQ, JQ, WF	(A)6-185C	.....
Webbing, cotton	11 types, 9/16-5 in., 10-20 ppi	crd or cmb	WF	(AC)16109-B	.....
Webbing, cotton	Types C-1 to C-12, 9/16 to 5 in., 0.40-4.65 oz.	crd or cmb	WF, A	(F)AN-JJ-W-151	.....
Webbing, Nylon	Classes N-1 to N-10, 9/16 to 5 in., 0.40 to 3.40 oz.	ply & braided	WF	(AC)16107	.....

Among other miscellaneous items purchased are: cordage (several types) by Army Signal Corps; elastic webbing (A) 6-53B, by WF, Chem; manila rope, (F) T-R-601a, by Baltimore Quartermaster Depot, Coast Artillery, Eng; twine (several types) by JQ, Ord.

III. OBTAINING GOVERNMENT CONTRACTS

From the lists given above the textile manufacturer can determine:

A. Types of textiles purchased by the Government which he can produce.

B. Government agencies purchasing each type of textile which he can produce.

The next step is to establish contact with each agency which purchases those types of textiles he can supply. This can be done by communicating by mail or in person with the procurement agency, indicating the type of textiles he is able to supply, giving a brief description of his financial status, submitting proof that he is a "responsible bidder," and requesting that he receive invitations to bid whenever a purchase is contemplated of those types of textiles he can supply. The invitations to bid issued by the various agencies describe in detail the procedure to be followed in bidding, materials required, terms of contract, etc.

To assist manufacturers in determining what types of products they may be able to supply for the Army; displays of textiles and other materials have been set up at the Quartermaster Depots and General Depots listed below:

Atlanta, Ga.
Boston, Mass.
Chicago, Ill. (Civic Opera Bldg.)
Detroit, Mich. (Fort Wayne)
Jeffersonville, Ind. (10th Street & Meigs Ave.)
New York City (521 Fifth Ave.)
Philadelphia, Pa. (21st and Johnston Sts.)
Kansas City, Mo. (Independence and Hardesty Aves.)
San Antonio, Tex. (Fort Sam Houston)
San Francisco, Cal. (Fort Mason)
Seattle, Wash. (4735 East Marginal Way)
Los Angeles (Chamber of Commerce Bldg.)

SPECIFICATIONS TEXTILE WAR MANUAL

How to Meet Government Requirements for Textiles

IN 1942 the quantity of textiles manufactured to Government specifications will be far greater than ever before. Many mills which up to now have done little or no work on Government contracts will be called upon to furnish textiles for the Army, Navy, and other Government agencies. Numerous other plants will find it necessary to produce various types of military textiles which they have not made previously. Thorough knowledge of the Government's requirements is a prerequisite if textile manufacturers are to perform this duty most efficiently. This section of the Textile War Manual outlines step-by-step the measures which textile men can take to gain that knowledge.

I. TYPES OF TEXTILES REQUIRED

The first step is find out what types of textiles are purchased by the Government. This information will enable one to determine what particular materials his plant is best fitted to produce. Major types of textiles purchased by the Government are listed in the preceding article. A number of other types are listed in the following publications which can be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

A. Federal Standard Stock Catalog, Section IV, Part I, Federal Specifications Index; (price 15¢).

B. Index of U. S. Army and Federal Specifications Used by the War Department (price 25¢).

C. Index of Specifications Used by the Navy Department for Naval Stores and Material (price 25¢).

D. Index of Marine Corps Specifications.

II. WHERE TO OBTAIN SPECIFICATIONS

The second step is to obtain copies of specifications for those particular types of textiles which one is in a position to produce. Prospective bidders can obtain copies of such Army, Navy, Marine Corps, Federal, and Treasury Department Procurement Division Specifications from various sources, as follows:

A. U. S. Army Specifications

1. Requests can be addressed to chief of the arm of service in Washington charged with the custody of the particular specification desired; i.e.,

a. Chief, Quartermaster Corps.
b. Chief, Medical Department.
c. Chief, Corps of Engineers.
d. Chief, Ordnance Department.
e. Chief, Signal Corps.
f. Chief, Chemical Warfare Service.
g. Chief, Air Corps.
h. Chief, Coast Artillery Corps.

2. Requests can be addressed also (with probability of quicker reply) to the Quartermaster Depot or other purchasing office which contracts for a particular type of textile as indicated in the preceding article; e.g.,

a. Commanding General, Philadelphia, Pa., Quartermaster Depot.
b. Commanding Officer, Jeffersonville (Ind.) Quartermaster Depot.
c. Chief, Materiel Division, Army Air Corps, Wright Field, Dayton, Ohio.
d. Quartermaster Supply Officer, First Ave. & 58th St., Brooklyn, N. Y.
e. Commanding Officer, Chicago Quartermaster Depot, 1819 West Pershing Sq., Chicago, Ill.
f. Quartermaster Supply Officer, San Francisco General Depot, Fort Mason, San Francisco, Calif.
g. Quartermaster Supply Officer, San Antonio General Depot, Fort Sam Houston, Texas.
h. Commanding Officer, New York Medical Depot, First Ave. & 58th St., Brooklyn, N. Y.

B. U. S. Navy Specifications

1. Requests can be addressed to Bureau of Supplies and Accounts, Navy Department, Washington, D. C., or to the supply officer of any Navy yard.

C. U. S. Marine Corps

1. Requests can be addressed to U. S. Marine Corps, Quartermaster Depot, 1100 South Broad St., Philadelphia.

D. U. S. Maritime Commission

1. Requests can be addressed to U. S. Maritime Commission, Procurement Division, Washington, D. C.

E. Federal Specifications

1. Can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C.

2. Requests for Federal Specifications applicable to purchases by the War Department, Navy Department, and Marine Corps can also be addressed to Chief of Supply arm of service making the purchases or to the Quartermaster Depot or other purchasing office which contracts for the particular type of textile desired.

3. Requests for specifications (other than Federal Specifications) applicable to purchases by the Procurement Division can be made to Director of Procurement, Treasury Department, Procurement Division, Washington, D. C.

Frequently it is possible for prospective bidders to obtain from a Quartermaster Depot, Naval Clothing Depot, etc., samples of textiles, by requesting them at the same time copies of the specifications for those textiles are asked for.

Government specifications for particular types of textiles give the requirements as to type, grade, material, color, fastness, breaking strength, construction (of woven fabrics), finish, etc. Ordinarily they do not give data on the yarn sizes, fabric layout, finishing routines, etc., which will produce

fabrics meeting the specifications; and these details must be worked out by a fabric designer. Such information on many of the more important fabrics has been published during the last 18 months in TEXTILE WORLD as indicated in the preceding article, and similar data on other fabrics will appear in subsequent issues. Further, requests for such information on any fabrics used for military purposes will receive prompt attention if addressed to Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York. Such requests should give specification number, weave, weight, width, and construction, and—if possible—should be accompanied by a sample of the fabric.

III. TESTS AND TEST METHODS

The next step is to obtain descriptions of the various tests to which the Government subjects textiles to determine whether or not they have been produced according to specification. Most of the tests employed are described in Federal Specification CCC-T-191a, Textiles; General Specifications, Test Methods. This specification can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. (price 5¢). Tests described follow:

A. Determination of moisture content.

B. Fiber identification and quantitative determination.

C. Qualitative and quantitative determination of sizing, finishing, weighting, and other non-fibrous materials.

D. Breaking strength.

E. Elongation.

F. Tearing Strength.

G. Weight.

H. Cloth construction.

I. Cloth dimensions.

J. Color fastness.

K. Shrinkage, laundering and sponging.

L. Water permeability.

M. Air permeability.

Certain other tests have been adopted and copies usually are embodied in the invitations for bids. For example, the Quartermaster Corps has adopted a water-repellency test which applies to fabrics which are required in a durable, water-repellent finish. Again the Navy Department has issued a booklet "General Specifications for Inspection of Materials," which is obtainable from Bureau of Supplies and Accounts, Navy Department, Washington, D. C.

IV. SIZES, STITCHES, THREADS, BUTTONS

The next step—particularly for manufacturers of knit goods, such as underwear, socks, and sweaters—is to become familiar with the following specifications, copies of which can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C.

A. Federal Specification JJ-U-531; for Underwear, Knit, Standard Sizes (price 10¢)

B. Federal Specification JJ-H-601; for Hosiery, Measuring Sizes (price 5¢)

C. Federal Specification DDD-3-751; for Stitches, Seams, and Stitching (price 25¢)

D. Federal Specification V-T-276B; for Thread, Cotton (price 5¢)

E. Federal Specification V-T-291a; for Thread, Linen (price 5¢)

F. Federal Specification V-T-301; for Thread, Silk (price 5¢)

G. Federal Specification V-B-871; for Buttons (price 5¢)

V. PACKING AND SHIPPING

The next step is to learn the Government requirements for packing, shipping, etc.

Such information is given in the following specifications:

A. Army Specification 23-54-B; Boxes and Crates for Shipment.

B. Federal Specification NN-B-621a; Boxes, Wood, Nailed and Locked Corner (price 5¢)

C. Federal Specification NN-B-601; Boxes, Wood, Cleated, Plywood Construction (price 5¢)

D. Federal Specification NN-B-591; Boxes, Wood, Cleated, Fiber Board (price 5¢)

E. Army Specification PQD68; Boxes, Fiber

F. Army Specification 100-2; Marking Shipments

G. Army Specification 19-60; Kraft Paper, Waterproof, Duplex

H. Federal Specification UU-P-268a; Paper, Kraft, Wrapping (price 5¢)

VI. TERMS OF CONTRACT

By following the steps outlined above the textile manufacturer will gain a familiarity with Government requirements which will enable him to manufacture to specifications with the least grief either to himself or the Government.

There is, however, another step which he should take before bidding on any Government contracts. That step is to study carefully the terms of the contracts, such as are supplied by the Quartermaster Corps when requests are made for informal bids (negotiated contracts). Among these are terms relating to deliveries, subcontracting, patents, delay-damages, inspection at factory, contractor's inspection, final inspection, factory conditions, termination, and representations and stipulations pursuant to Public Act No. 846, 74th Congress.

A final step—which is not always necessary, but which sometimes is advantageous—is direct consultation by letter or in person with the procurement officers and inspectors concerning any questions or problems encountered in manufacture of textiles to Government specifications.

WAR CONTROLS TEXTILE WAR MANUAL

How Price Ceilings, Priorities, and Allocations Affect Textiles

SINCE THE BEGINNING of the emergency which preceded our entry into the war, production of vital materials and equipment has been guided successively by several agencies. First we had the National Defense Advisory Commission, which was superseded by Office of Production Management. Later OPM was topped by Supply Priorities and Allocations Board, and recently SPAB has been replaced by the War Production Board which drops OPM as such, but retains its function. In supreme authority is Donald M. Nelson, former vice-president of Sears-Roebuck, at one time chairman of the wage-hour industry committee for textiles, but more recently Director of Priorities of OPM.

The changing from one agency to another has been the result of increasing war pressure, and there is no reason to believe that we have yet reached the end-point in the evolution of our production-control setup. However, there should, in the future, be fewer changes in organization; but it is felt that radical changes in regulations will be made.

Presented in this article are outlines of the War Production Board and the Office of Price Administration. These agencies exercise control over all war and civilian production and prices, including textiles. Readers are advised to keep their information up-to-date from this point forward by reading the monthly articles which will appear in TEXTILE WORLD.

I. HOW THE WAR PRODUCTION BOARD WORKS

The War Production Board, for total-war production, centers unprecedented industrial authority upon one man and a small group of advisers. President Roosevelt's power and influence in the world now make such bigwigs as Napoleon and Caesar look like straw-bosses, and Nelson is second only to Roosevelt. In reality, he is assistant president.

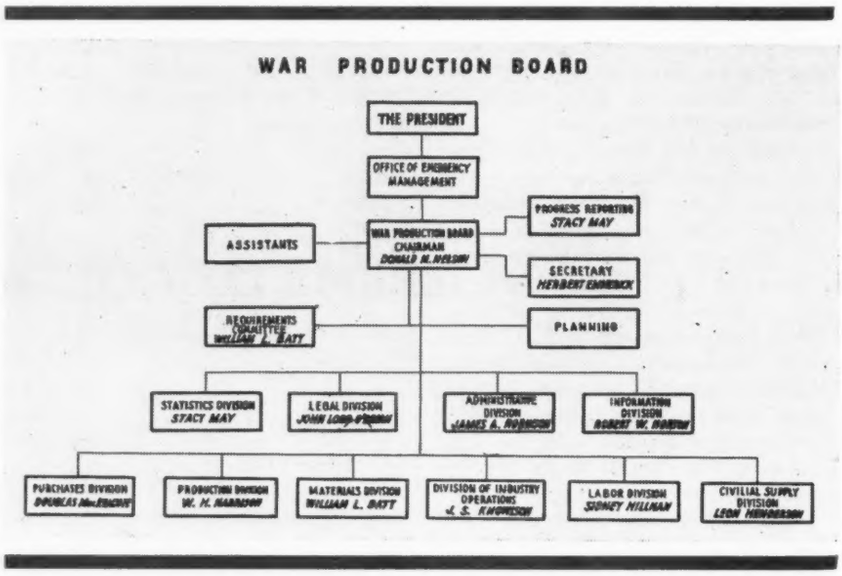
This board may not be the last top industrial authority in this war. Nelson himself called it an "interim" organization, subject to change. And Mr. Nelson told a TEXTILE WORLD writer at his press conference that, in addition to WPB, there may soon be a United Nations office for control of materials and production. This might be headed by Nelson.

The President's aim in creating WPB is to concentrate the whole energy of the nation behind production of war materials. Nelson himself, for months, has said that it will be better to put on full steam and beat the Axis quickly than endure the war for years. The only way to go full speed ahead is to halt "debating societies," as Nelson put it, and let one central authority run the job.

Look at the WPB chart accompanying this article. Under the President comes the Office of Emergency Management, which is not changed. OEM was really nothing but buffer between the President and, first, OPM, then SPAB, and now the newly-formed WPB.

Next thing you notice is that OPM is missing. This is in line with the aim to cut out lost motion. But you see all of the OPM Divisions except the Priorities Division and Contract Distribution Division. Priorities is incorporated into the Division of Industry Operations, and Contract Distribution is tied in with the Production Division. This latter was done, Mr. Nelson said, at the suggestion of Floyd Odlum, former CDD chief, who remains with WPB as advisor.

Thus, all the functions of OPM are retained in the divisional group, and one is added: the Division of Industry Operations, under J. S. Knowlson, chairman of the board of Stewart-Warner. This Division is the key to the whole WPB setup. It covers the problem of converting all kinds of plants and in some cases whole industries to war production, such as the automobile industry. DIO is the key because the Administration has decided, for speed, to convert our industry to war, rather than wait to build war plants.


WAR PRODUCTION BOARD
THE PRESIDENT
OFFICE OF EMERGENCY MANAGEMENT
ASSISTANTS
WAR PRODUCTION BOARD CHAIRMAN DONALD M. NELSON
PROGRESS REPORTING STACY MAY
SECRETARY HERBERT EMMERICK
REQUIREMENTS COMMITTEE WILLIAM L. BATT
PLANNING
STATISTICS DIVISION STACY MAY
LEGAL DIVISION JOHN LORD O'BRIAN
ADMINISTRATIVE DIVISION JAMES A. ROBINSON
INFORMATION DIVISION ROBERT W. HORTON
PURCHASES DIVISION DONALD NELSON
PRODUCTION DIVISION W. H. HARRISON
MATERIALS DIVISION WILLIAM L. BATT
DIVISION OF INDUSTRY OPERATIONS J. S. KNOWLSON
LABOR DIVISION SIDNEY HILLMAN
CIVILIAN SUPPLY DIVISION LEON HENDERSON

Constantly informing Mr. Nelson on whether there is enough wool clothing coming along to match the increase in Army manpower, whether enough machine guns are coming to arm the airplanes, whether enough duck can be made without actually building plants, is expert statistician Stacy May, with his progress-reporting office responsible only to Nelson, shown at top right on the chart.

Below Chairman Nelson, on the chart, you see the secretaries; then below them, two important functions: the Requirements Committee, which estimates all materials on hand and available anywhere in the world, and reports them to the Materials Division, whose job it is to acquire them. And at the right, Planning, which has no administrative and no policy powers, but whose job it is to think, and use its imagination about the future—something the business administrators don't have time to do.

The four divisions next below are obvious functions which need no further explanation.

Two more functions remained to be placed at this writing: The Bureau of Industrial Conservation, Mr. Nelson said, probably would be attached to the Materials Division. And Nelson said he probably would create a Field Division, to expedite all Washington matters outside Washington, a seventh office in the bottom row on the chart.

This whole WPB setup should be understood, because all of the six (and maybe seven) divisions at the bottom of the chart have now and will have a hand in the textile industry.

It was the Purchases Division working with the Quartermaster and with the Navy, which worked out the recent cooperative procurement plan for cotton duck. The Production Division also had a part in the industry's job of switching mills over to the production of duck. So had the Contract Distribution section of Production.

Materials Division is concerned about the supply of wool, long-staple cotton, linters, rayon, Nylon, jute, and the dwindling store of silk.

Bureau of Industry Conservation, presumably attached to Materials, is trying to bring about the saving and salvage of all kinds of materials, including all fibers, new and used.

Division of Industry Operations is the mainspring of all these wheels, with power to seize all plants, or pool them in any way, stop those that cannot make war or essential goods.

Labor Division can set up more schools to train men for you, if you are short. It can stop your plant because your workers are needed on more important jobs. It can stop other industries from raiding your plant and taking your workers away to other regions.

Civilian Supply Division can say that civilians can do without something you are making, and take your materials away from you. On the other hand, it is CSD's job to fight for essentials for the civil population, because the public must be kept in a mood to support its war.

Most of all, you will come in contact with the Priorities Section of the Division of Industry Operation which is administered by J. S. Knowlson.

II. OFFICE OF PRICE ADMINISTRATION

A. Duties and Organization—The Office of Price Administration under Leon Henderson, Administrator, is charged with two basic duties: the prevention of inflation, and the protection of consumer interests. Mr. Henderson consults with and is advised by a price administration committee consisting of himself as chairman, the Secretaries of the Treasury and of Agriculture, Federal Loan Administrator, chairmen of the Tariff and the Federal Trade Commissions, and officials of WPB. Not only does the Administrator issue price schedules on various commodities, but he warns against price movements which are considered unjustified.

The textiles and apparel section of OPA is headed by Burton E. Oppenheim who is on loan to OPA from the Department of Labor, where he was in charge of the industry committee branch of the Wage-Hour Division. Assisting Oppenheim is James P. Davis, associate price executive, who is in charge of the section's industry relations. He was formerly in the consular service and was with the research and planning division of NRA, Jay Jefferson Miller, formerly vice-president of the Hecht Co., Baltimore, is associated as technical expert on distribution, and Richard Gettell, professor of economics at Yale University, is working as a price expert on textiles.

B. *War Price Control Law*—After months of walking around the inflation dragon, Congress finally agreed, in late January, on a price-control bill. The major battle was over the question of ceilings on farm prices and wages. In effect, high ceilings were achieved on agricultural produce, but wages were entirely by-passed.

Under the law, cotton and wool could be set sky-high if Secretary of Agriculture insists upon it, but he probably won't, because he would incur displeasure of the Administration, and there is still plenty of spinnable cotton.

Whatever price cotton may reach, it will carry all cotton yarn and cloth ceilings up with it, as the two are geared together under the "sliding" spot-market scale. Whatever happens will make small difference to the manufacturers of goods, because the Government will have to absorb the increases.

Main provisions of the bill are five:

1. Licensing of handlers and dealers; violators of price ceilings will get their doors locked;

2. Control is placed in the hands of one man instead of a board;

3. The Administrator has power to buy and sell commodities to increase production or control prices;

4. Ceilings on farm prices shall not be set below

a. 110% of parity;

b. the prevailing price on Oct. 1 or Dec. 15, 1941, whichever is higher;

c. the average market price from 1919 to 1929.

5. Prohibits fixing *any* ceilings on agricultural prices without the approval of the Secretary of Agriculture.

C. *Regulations and Agreements on Textiles and Related Products*—Brief case histories of textiles and related products which have been affected by regulation or agreement:

1. *Bleaching Powder*—On Dec. 19, Leon Henderson announced that by individual agreements with the producers, the 1942 price of bleaching powder has been stabilized at a temporary ceiling, 25c. per 100 lb. more than the 1941 level.

2. *Burlap*—Announcement of allocation of shipping space for importation and proration of supplies among

CEILINGS TEXTILE WAR MANUAL

users was made by OPA on July 18. On Aug. 15, price schedule No. 18 fixed maximum prices of 17 constructions at 20% below the spot market; the maximums apply on sales of 25 bales or more, and allow ceiling plus 10% where amount of sale is less than 25 bales; no restriction on quantities of less than one bale.

Burlap was placed under complete control on Dec. 22, and Government was to get two-thirds of future imports. At the same time, inventory reports on forms PD-186 were required, and monthly reports on PD-188 where 20,000 yd. or more were held at any time in 1941. OPM, on Dec. 31, directed that burlap be used only on orders with rating of A-1-J, or higher, orders of Army or Navy for sandbags or camouflage cloth, or orders of Defense Supplies Corp., or other RFC agency.

3. *Chlorine*—On July 26, chlorine was placed under priority, and the order stated that producers must accept orders with defense ratings when offered, that unreasonable delay in delivery should be reported to chemical section of Priorities Division of OPM, and that after fulfillment of all defense rating orders the remaining chlorine can be used for other orders. Seven essential civilian uses of chlorine were defined by OPM on July 30. In September and November, OPM issued orders limiting use of chlorine in manufacture of paper and pulp.

Effective Feb. 1, by amendment to General Preference Order M-19, chlorine was put on an allocation basis.

4. *Cotton*—On Jan. 5, the Commodity Credit Corp. announced that Government-owned cotton stored in the Carolina mill area was available for purchase by mills at prices based on 19¢ for 15/16-in. middling.

5. *Cotton Gray Goods*—In June, Schedule No. 11 established ceilings running 15% and more under prevailing prices on 6 gray constructions, and in early July an advisory committee was appointed. Effective June 30, ceilings were revised upward bringing print cloth to 43¢ per lb. Restricted exemption from ceilings was granted on Aug. 8 to retailers, jobbers, and wholesalers who sell unfinished goods for industrial and private use. Effective Aug. 23, the schedule was extended to cover principal fine-goods constructions, with ceilings ⅛ to 1½¢ below prices on Aug. 20. Effective Oct. 4, it was announced that ¾¢ yd. premium could be added to the ceiling of 13⅛¢ on combed lawn for Marine Corps poncho fabric.

Ceilings of carded-yarn fabrics were tied to the price of spot cotton, effective Oct. 21. Included under the order are: print cloths, sheetings, twills, drills, broadcloth, jeans, poplins, piques, pajama checks, and denims. The same day, carded-yarn fabrics were removed from Schodule No. 11 and placed in Schedule No. 35.

On Dec. 1, to be retroactive to Oct. 21, Schedule No. 35 was amended to allow a 6¢ premium on shade cloth above the ceiling for print cloth.

Fine, or combed-yarn fabric ceilings were tied to the price of spot cotton in an order given Dec. 23. Effective Dec. 29, an amendment to Schedule 35, modified the fancy draw premiums hitherto chargeable on carded gray goods. Two drills needed in quantity by the Army, both 8½ oz., with constructions of 72 x 46 and 74 x 60, were allowed 1¢ premium by amendment on Jan. 6. At the same time, the Navy consented to accept bids for cotton goods at ceilings prevailing on the day of the award.

6. *Cotton Linters*—Under order M-12, Aug. 20, cotton linters were placed under full priority, and the sale of second-cut linters or more than 20% of mill-run linters to any but chemical industries was prohibited. On Nov. 5 the premium of 1.65¢ lb. allowable on small sales of chemical grade linters was cancelled.

7. *Carded Cotton Yarns* — During August and September, OPA consulted mill men and collected data as a basis for a schedule of prices on carded yarns. Schedule No. 33, effective Oct. 6, keyed carded yarn ceilings to spot cotton prices. The base of 15.99¢ a lb. for raw cotton was set, with provision for adjustment of ½¢ a lb. in yarn prices for every change of 44½ points in the price of spot cotton. The ceilings of plied yarns (2-ply) were established 4 to 5¢ lb. above singles of the same size.

On Nov. 26, it was announced that deliveries under contracts entered into before July 21 could be completed at the maximum prices based on 15.99¢ for spot cotton.

8. *Combed Cotton Yarns*—In May, after a warning that current prices were too high, OPACS issued Scheduled No. 7, fixing ceiling prices of combed yarns about 20% under existing levels; basis was 42¢ lb. for 30/1. An amendment to Schedule No. 7, on June 19, changed differentials on coarser counts to ¼¢ lb., and exempted export yarns from the ceiling. Increases of 3¢ lb. and 1¢ lb. were made in the ceilings of singles and 2-ply yarns on July 21. On Aug. 1, 11¢ to 24¢ lb. was added to ceilings of yarns 86s and finer.

A revised schedule, announced Dec. 24, provided for adjustments in ceiling prices in line with changes in spot cotton prices. On Dec. 29, the sliding-

TEXTILES, CLOTHING AND LEATHER GOODS BRANCH

This branch was formerly Textiles, Clothing and Equipage, of OPM, and under it was Textiles and Fiber Section. It is now Textiles, Clothing and Leather Goods Branch, of the Division of Industry Operations, under the War Production Board. It handles priorities. J. S. Knowlson is chief of DIO.

PHILIP D. REED, is special assistant to DIO, in charge of industry branches.

R. R. GUTHRIE is chief of Textiles, Clothing and Leather Goods Branch. His branch was previously called Textiles and Fibers Section.

MARSHALL HALE, JR., is assistant chief of the Branch.

FRANK WALTON is chief of Cotton and Cotton Fabrics Section.

KENNETH MARRINER is chief of the Wool Section.

JOHN SHIREMAN is acting chief of Textile Allocations Section.

J. W. BYRON is chief of the Leather Goods Section.

IRVING SQUIRES is chief of the Clothing Section.

J. STANLEY MARCUS is chief of the Needle Trades Section.

COTTON TEXTILE INDUSTRY COMMITTEE, composed of experts and members of the industry, was in process of formation at this writing.

TECHNICAL SUB-COMMITTEES, covering cotton duck, cotton bagging (osnaburg), print cloth, colored goods, carded yarn, combed yarn, cotton thread, combed fabrics, cotton yarn mercerizers, statistics, and others, were being formed.

ADVISORY COMMITTEES: were in process of organization and re-organization at this writing.

scale basis was announced. An amendment on Jan. 6 allowed premiums of from 5.25 to 13¢ lb. on single and 2-ply combed yarns needed in making wind-resistant cloth and uniform twill for the Army. At the same time, temporary elimination of twist premiums was announced.

9. *Floor Coverings*—Stabilization of rug and carpet prices was effected by a series of agreements between OPA and manufacturers, announced Nov. 8. On Dec. 15, prices of wool rugs were frozen at Oct. 13 levels, and on Dec. 16 OPA issued Schedule No. 57. An upward revision of 5% in ceiling prices was accomplished by amendment to Schedule No. 7, effective Jan. 5. Both imported and domestic rugs are affected. An additional amendment announced on Jan. 8 prohibits distributors from reselling rugs purchased prior to Jan. 2 at prices higher than ceilings; profit must come from discounts allowed by the manufacturers.

10. *Kapok*—Price Schedule No. 59, effective on Dec. 22, established a ceiling price on kapok at the maximum price which the seller had received during the period Nov. 15 to Dec. 16.

11. *Manila Fiber*—Priorities order M-36, on Aug. 29, set up three classes of Manila fiber, designated A, B, and C. The best grades, A and B, were limited to defense orders, commercial fishing, marine uses, oil lines for drill cables, catlines, spinning lines, torpedo lines, and mining. Grade C, containing less than 50% fiber, was available for civilian consumption and was unrestricted. On Oct. 12, buying of Manila fiber in the Philippines was centered in the Defense Supply Corp., and the Navy.

On Dec. 19, 12 days after the Japanese attack, sale to mining industry was halted and further manufacture of class C cordage was prohibited.

12. *Power*—Limitation Order L-16, issued on Oct. 30, instituted power rationing in 6 southeastern States, and froze power consumption of large consumers, and on Nov. 19 OPM estimated that 5,000,000 kwh. a month were being saved as a result. Restrictions on use of power in the affected area were lifted on Dec. 6, but the power pool was continued as a safeguard. Order L-16 was revoked on Jan. 3.

13. *Rags*—On Dec. 7 price Schedule No. 47 set ceilings on 80 to 90% of the various grades of rags. Ceilings were substantially under existing levels.

14. *Rayon Gray Goods*—Rayon gray goods prices were reduced about 10% with the going into effect of price Schedule No. 23, on Aug. 25. An amendment, on Oct. 3, withdrew the requirement that completed fabric construction data be included in sales contracts of fabrics other than those named in the schedule.

15. *Rayon Waste*—It was announced by OPA on Dec. 31 that a schedule on rayon waste, including rags, noils, and all other forms of waste, would be issued soon.

16. *Rayon Yarns*—During August and September, rayon yarn producers were required under Order M-37, to set aside 1/10 of output and stocks on hand, to be distributed to former users of silk; 70% of the pool thus created was for use of hosiery manufacturers, and the remaining 30% for other users of silk. The 30% proved to be too much, so producers were allowed, on Aug. 15, to sell half of it. Hosiery manufacturers found that viscose and cupra types were more suitable for their use so, on Aug. 19, an amendment to M-37 allowed release of 95% of the earmarked acetate.

Order M-37-a, effective on Oct. 1, established a basis whereby producers of viscose and cupra yarn were required to set aside yarn of 300 denier and finer amounting to 9% of spindle capacity, excluding spindles on defense contracts. The 9% pool was to be divided as follows: 1/10 to a hardship pool, 1/20 to former silk users not hosiery manufacturers, and the balance to hosiery mills. Acetate yarn producers were required to set aside 5%, to be allocated as follows: 1/10 to hardship pool, 1/10 to hosiery manufacturers, and the balance to former silk users other than hosiery manufacturers. Allocation of 3,300,000 lb. of rayon to Latin American countries was announced on Jan. 15.

17. *Silk and Silk Waste*—In July, OPA and OPM successively asked suspension of trading in silk futures and by Order M-22, froze stocks in the hands of holders. On Aug. 1, processing of raw silk was ordered stopped in order to conserve stocks for military use; only thrown silk in possession of mill could be used. On Aug. 2, Schedule No. 14 established ceilings on raw silk and silk waste, based on prices of July 21.

Lessing J. Rosenwald was appointed, on Aug. 6, to head a joint OPA-OPM commodity section for silk. The first action of the joint commodity section was a request that the hosiery industry observe a 3-point program: (1) use of only 50% silk in "silk" hosiery, using Nylon or other materials for the remaining 50%; (2) that half the supply of Nylon be used in all-Nylon hose and that the remaining Nylon be used 50-50 with other materials; (3) that hose manufacturers buy rayon yarns only for current consumption. On the same day, Aug. 8, all silk waste, noils and reclaimed fiber was placed under priority by order M-26.

On Sept. 6, order M-26 was amended to allow delivery of noils, waste and reclaimed fiber, but only partial processing, consisting of dressing and spreading, was allowed.

Release of silk broken from original bales before midnight Aug. 2, was allowed by an order issued Sept. 9, but processing is subject to conditions. All types of raw silk known to be in the country were included under Schedule No. 14 by an announcement of Oct. 1. Amendments to M-22 on Oct. 16 prohibited all further transfer of

BUREAU OF INDUSTRIAL CONSERVATION

TEXTILE CONSULTANT: F. S. Blanchard

This conservation agency is under the Materials Division of the War Production Board, headed by William L. Batt.

Its function is to curtail waste of materials everywhere; simplify design for less material; salvage materials; substitute plentiful for strategic materials. To save materials it asks the cooperation of individuals, manufacturers, industries, local governments. It is supported by official orders of OPA and WPB.

BIC's first job in textiles was to cut consumption of, and save, silk, which it did effectively. Now it is after practically all textiles, especially wool cloth, duck, and burlap, cutting corners everywhere. If the war lasts and you eventually wear a one-piece zip suit, thank BIC.

titles to raw silk stocks, and assigned a blanket A–10 priority rating to all Army, Navy, and Weather Bureau orders for silk fabric, thread, and cord.

On Oct. 24, an OPM order required that reports of ownership of all unbroken bales must be submitted by Oct. 30.

18. *Textile Machinery*—Order P–53, issued on Sept. 16, assigned a blanket A–19 rating to manufacturers of maintenance and repair parts for textile machinery, but stated that manufacturers should apply on form PD–88. On Dec. 3, order P–53 was extended to include tubes, cones, and spools. Upon receipt of reports that many mills were planning to liquidate, OPM announced that it was opposed to the shutting down of plants in order to export the machinery.

19. *Upholstery Fabrics* — Manufacturers of upholstery fabrics requested a stabilization of prices at Sept. 10 to Nov. 10 levels, and entered voluntary agreements with OPA. Effective Nov. 10, price Schedule No. 39 was issued, fixing upholstery fabric price ceilings at 105% of levels existing Sept. 10.

20. *Wool*—Price Schedule No. 58, effective Dec. 18, but not retroactive, established ceilings on wool, tops, yarn, and carpet wool at maximum prices received during the period Oct. 1 to Dec. 6. An industry advisory committee was announced on Dec. 27. An announcement on Dec. 30 stated that civilian consumption of wool during the first 3 months of 1942 will be limited to 40–50% of previous use, and that subsequently the civilian quota will be reduced to 30%. A further announcement on Jan. 3 set limits on civilian consumption of 50% of tops for worsted and 40% of scoured wool for woolens.

An announcement was made on Jan. 12 that ceilings on wool, tops and yarn would be adjusted to correspond with any changes taking place in war-risk insurance on ocean freight rates. On Jan. 16, going market prices for raw wool in South American markets were adopted as temporary ceilings in order to allow American manufacturers to bid on Army contracts to be opened Jan. 20.

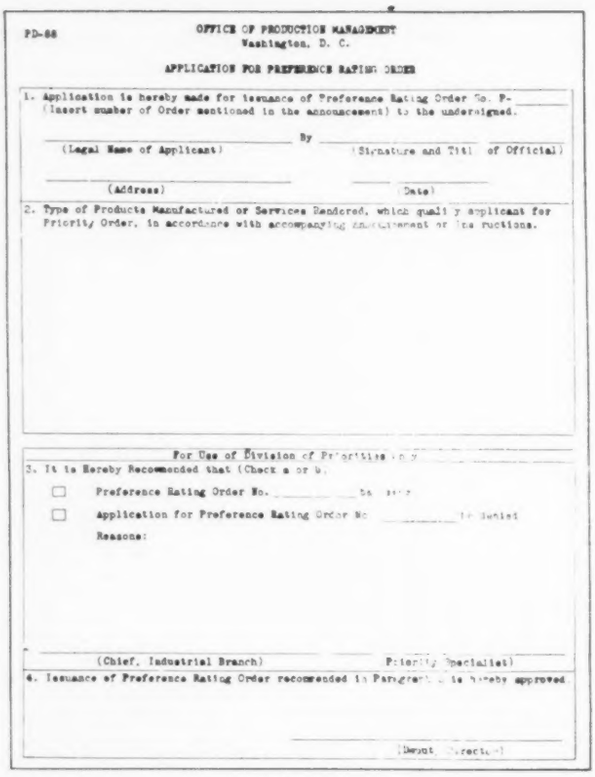
III. PRIORITY SYSTEM AND RECENT CHANGES

A. For months now the Government has been inching away from priorities toward allocations. But it cannot move very fast, because the system is woven into the war-production system, and if too many priority threads are cut, the whole thing would break down. Donald Nelson told a TEXTILE WORLD writer that the priority system would continue to change as it has in the past, not radically but by degrees. The only way to follow it is to know the framework, and watch the details. Recent changes include:

1. The system has replaced forms PD–1 to PD–5 with new forms PD–1–a and PD–3–a.

2. Ratings can now be extended to suppliers simply by indorsement.

3. The holder of a rating, whether supplier or sub-supplier, can use the



PD-88

OFFICE OF PRODUCTION MANAGEMENT
Washington, D. C.

APPLICATION FOR PREFERENCE RATING ORDER

1. Application is hereby made for issuance of Preference Rating Order No. P-_____ (Insert number of Order mentioned in the announcement) to the undersigned.

_____ By _____
(Legal Name of Applicant) (Signature and Title of Official)

_____ _____
(Address) (Date)

2. Type of Products Manufactured or Services Rendered, which qualify applicant for Priority Order, in accordance with accompanying announcement or instructions.

For Use of Division of Priorities Only

3. It is Hereby Recommended that (Check a or b):

☐ Preference Rating Order No. _____ be issued

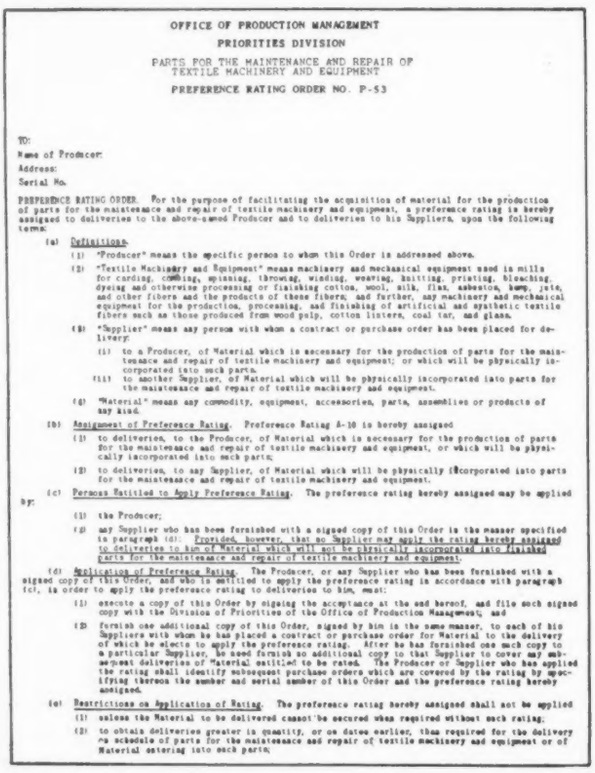
☐ Application for Preference Rating Order No _____ be denied

Reasons:

_____
(Chief, Industrial Branch) Priorities Specialist)

4. Issuance of Preference Rating Order recommended in Paragraph _____ is hereby approved.

_____
(Deputy Director)



P-53

OFFICE OF PRODUCTION MANAGEMENT
PRIORITIES DIVISION

PARTS FOR THE MAINTENANCE AND REPAIR OF TEXTILE MACHINERY AND EQUIPMENT

PREFERENCE RATING ORDER NO. P-53

TO:
Name of Producer:
Address:
Serial No.

PREFERENCE RATING ORDER. For the purpose of facilitating the acquisition of material for the production of parts for the maintenance and repair of textile machinery and equipment, a preference rating is hereby assigned to deliveries to the above-named Producer and to deliveries to his Suppliers, upon the following terms:

(a) Definitions.

(1) "Producer" means the specific person to whom this Order is addressed above.

(2) "Textile Machinery and Equipment" means machinery and mechanical equipment used in mills for carding, combing, spinning, throwing, winding, weaving, knitting, printing, bleaching, dyeing and otherwise processing or finishing cotton, wool, silk, flax, asbestos, hemp, jute, and other fibers and the products of these fibers; and further, any machinery and mechanical equipment for the production, processing, and finishing of artificial and synthetic textile fibers such as those produced from wood pulp, cotton linters, coal tar, and glass.

(3) "Supplier" means any person with whom a contract or purchase order has been placed for delivery:

(i) to a Producer, of Material which is necessary for the production of parts for the maintenance and repair of textile machinery and equipment; or which will be physically incorporated into such parts.

(ii) to another Supplier, of Material which will be physically incorporated into parts for the maintenance and repair of textile machinery and equipment.

(4) "Material" means any commodity, equipment, accessories, parts, assemblies or products of any kind.

(b) Assignment of Preference Rating. Preference Rating A-10 is hereby assigned

(1) to deliveries, to the Producer, of Material which is necessary for the production of parts for the maintenance and repair of textile machinery and equipment, or which will be physically incorporated into such parts;

(2) to deliveries, to any Supplier, of Material which will be physically incorporated into parts for the maintenance and repair of textile machinery and equipment.

(c) Persons Entitled to Apply Preference Rating. The preference rating hereby assigned may be applied by:

(1) the Producer;

(2) any Supplier who has been furnished with a signed copy of this Order in the manner specified in paragraph (d). Provided, however, that no Supplier may apply the rating hereby assigned to deliveries to him of Material which will not be physically incorporated into finished parts for the maintenance and repair of textile machinery and equipment.

(d) Application of Preference Rating. The Producer, or any Supplier who has been furnished with a signed copy of this Order, and who is entitled to apply the preference rating in accordance with paragraph (c), in order to apply the preference rating to deliveries to him, must:

(1) execute a copy of this Order by signing the acceptance at the end hereof, and file such signed copy with the Division of Priorities of the Office of Production Management; and

(2) furnish one additional copy of this Order, signed by him in the same manner, to each of his Suppliers with whom he has placed a contract or purchase order for Material to the delivery of which he elects to apply the preference rating. After he has furnished one such copy to a particular Supplier, he need furnish no additional copy to that Supplier to cover any subsequent deliveries of Material entitled to be rated. The Producer or Supplier who has applied the rating shall identify subsequent purchase orders which are covered by the rating by specifying thereon the number and serial number of this Order and the preference rating hereby assigned.

(e) Restrictions on Application of Rating. The preference rating hereby assigned shall not be applied

(1) unless the Material to be delivered cannot be secured when required without such rating;

(2) to obtain deliveries greater in quantity, or on dates earlier, than required for the delivery in schedules of parts for the maintenance and repair of textile machinery and equipment or of Material entering into such parts;

rating to replenish stocks expended under the order.

4. A supplier receiving several orders with the same rating can lump them into one in replacing his materials.

5. In priorities order P–53, issued Sept. 16, manufacturers of textile maintenance and repair parts were granted a blanket rating of A–10 which was intended to keep existing machinery operating and to prevent marked labor displacement. However, A–10 does not always deliver the goods, and it is sometimes necessary for mills to seek the assistance of a higher rating. Forms PD–1 to PD–5 have been replaced by PD–1–a and PD–3–a but the procedure of using the new forms is substantially the same.

PD–1–a is the form on which a manufacturer who does not have defense contracts applies for a higher rating. An executed form, requesting assistance, should be sent to the Textile Division of WPB. The new simplified procedure provides that ratings, when granted, are stamped on the form itself. Unlike the old form, PD—1, which would not be extended, ratings on form PD–1–a can be extended to suppliers and sub-suppliers by indorsement of purchase orders by the one receiving the ratings, and do not require countersignature.

Form PD–3–a is the form on which manufacturers who do have defense contracts should seek the assistance of a higher rating. Under the new regulation, it will be used for applications for ratings on orders from Army, Navy, Coast Guard, Coast and Geodedic Survey, Panama Canal, Maritime Commission, Procurement Division of the Treasury, Surplus Marketing Administration, Civil Aeronautics Authority, National Advisory Committee for Aeronautics, and orders from foreign governments under Lend-Lease. A request for authenticated copies of PD–3–a should be sent to the contracting officer, who will grant a higher rating if he deems it necessary.

Ratings assigned on PD–3–a, regardless of the amount or value of material involved, can be extended to suppliers and sub-suppliers by indorsement.

Manufacturers who use form PD–1–a may obtain them from Textile Division of WPB or may have their own printers run off a supply. Copies of form PD–3–a may not be reproduced and are obtainable from contracting and procurement branches of Army and Navy.

Forms PD–1–a and PD–3–a are intended to assist mills in obtaining maintenance and repair parts, expendable operating supplies, replacement of obsolete machinery, dyestuffs, yarns, and new machinery for balancing production. However, all purchases of new machinery, whether for replacement or worn out equipment, balancing production, or for plant expansion, must be approved by the Army or Navy, and the new machines must be intended for production of some hard-to-get textile item vital to one or more of the branches of service. In such cases, fill out no forms, but go personally with your proposition to your contracting officer; if he approves, he will go to bat for you with WPB.

The New Textile, Clothing and Leather Goods Branch, now in the Division of Industry Operations of the War Production Board, replaces the old Textile Division of OPM. In this article it is called simply the Textile Branch of WPB, or "TB."

B. The general priority system operates as follows:

1. Maintenance and Repair Parts:

a. *Mills having defense contracts* do not need preference rating certifi-

OFFICE OF PRODUCTION MANAGEMENT, DIVISION OF PRIORITIES, WASHINGTON, D. C.
PD-1A ORIGINAL
2/2/42 PREFERENCE RATING CERTIFICATE No.
TO BE FILLED OUT BY THE APPLICANT
ISSUED TO:

Name of Applicant

Main Office Address | Receiving Plant Address

ITEMS COVERED BY THIS CERTIFICATE - List for each Item:

Required Delivery Date from Supplier	Quantity Each Shipment	Value Each Shipment	Description

PRIORITIES REGULATION NUMBER 3 GOVERNS THE ISSUANCE OF THIS CERTIFICATE AND THE PREFERENCE RATING ASSIGNED. ALL OF ITS TERMS MUST BE OBSERVED. THE FOLLOWING INSTRUCTIONS ARE PROVIDED TO ASSIST IN EXTENSION OF PREFERENCE RATINGS:

1. The Preference Rating assigned by this Certificate may be extended only to

(a) Deliveries of Material which will be physically incorporated into material to be ultimately delivered to the original recipient of the Preference Rating, or to deliveries of Material which itself will be ultimately delivered to the original recipient of the Preference Rating, or which will be used, within the limitations of paragraph (e) of Priorities Regulation No. 3, to restore inventory to a practicable working minimum.

(b) Material which is neither greater in quantity nor to be delivered on dates earlier than required to make on schedule a rated delivery or, within the limitations of Priorities Regulation No. 3, to restore inventory to a practicable working minimum.

2. The Person to whom this certificate is issued shall retain it and he, and each related Supplier and Subsupplier may extend the Preference Rating assigned herein to his purchase order(s) by executing and transmitting to his Supplier(s) by endorsement on purchase order or other equivalent document, the following form of Certification, which shall constitute a representation to the Division of Priorities, Office of Production Management.

"CERTIFICATION"

Preference Rating _____ is hereby applied pursuant to Certificate PD-1A, Serial No(s) _____ in accordance with Priorities Regulation No. 3, with which I certify I have complied.

Address | Applicant, Supplier or Subsupplier

Date | Signature and Title of Official

TO BE FILLED OUT BY THE DIVISION OF PRIORITIES

THE FOLLOWING PREFERENCE RATING IS HEREBY ASSIGNED TO THE ITEMS IN THE QUANTITIES COVERED BY THIS CERTIFICATE:

Preference Rating
Date

Office of Production Management, Washington, D. C.

PD-1A

(THIS FORM MAY NOT BE REPRODUCED)
OFFICE OF PRODUCTION MANAGEMENT, DIVISION OF PRIORITIES, WASHINGTON, D. C.
PD-3A - ORIGINAL PREFERENCE RATING CERTIFICATE Serial No. (M-
2/2/42

1. Issued To: _____ Contractor

2. Main Office Address: _____

3. Related Contract No. of Initiating Government Agency _____

4. Government Agency which placed contract: _____ Name and Address (If Army or Navy, specify Supply Arm or Bureau)

5. ITEMS COVERED BY THIS CERTIFICATE - List for each Item:

Required Delivery Date(s)	Quantity Each Shipment	Value Each Shipment	Description

6. AUTHENTICATION: I hereby certify that the items specified in this Certificate are essential for the completion of the government contract cited herein, and that the quantities and Required Delivery Date(s) specified are not greater nor earlier than necessary for completion on time of said contract.

Signature and Title of Authorized Official of Contractor | Countersignature and Title of U. S. Government Official

Date | Post, Camp or Station | Date

7. Preference Rating _____ (AMER Code No. _____) is hereby assigned to the items in the quantities covered by this Certificate. If this Certificate covers machine tools, cite Urgency Standing No. (if any): _____

This Certificate is not valid unless Authentication is signed by the Contractor to whom issued and countersigned by the appropriate U. S. Government Official.

(D. M. WELSON)
Director of Priorities

(P.D. Reg. 1 Amended, Dec. 23, 1941, 6 F.R. 6580; P.D. Reg. 3, Jan. 15, 1942; O.P.M. Reg. 3 Amended, Sept. 2, 1941, 6 F.R. 4665; E.O. 8629, Jan. 7, 1941, 6 F.R. 191; E.O. 8875, Aug. 28, 1941, 6 F.R. 4483; sec. 2(a), Public No. 671, 76th Congress, Third Session, as amended by Public No. 89, 77th Congress, First Session.)

ORIGINAL TO BE ISSUED TO AND RETAINED BY CONTRACTOR

PD-3A

cates to get maintenance and repair parts for existing machinery, except in rare cases of extremely critical metals, such as aluminum, nickel, copper, etc. Parts manufacturers, under priority order P-53, are granted a blanket rating of A-10. This rating enables them to buy more metal, usually steel and cast iron, to replace what they use in making parts for mills. Simply send your order to your parts manufacturers. You are not required to explain whether the parts are for defense work or not, but it's a good idea to do it anyway. No forms are needed. If you don't get the parts, write your contracting officer for a supply of Form PD-3-A. Fill out and send to him for authentication. He will give you a rating not lower than A-1-I, if convinced you can get the parts no other way, and will distribute copies to interested parties.

b. *Mills without defense contracts,* or with a small part of their capacity occupied with defense work, have exactly the same right to maintenance and repair parts as do mills *with* defense contracts. The aim in extending this right to non-defense plants is to prevent undue hardship on them, and to keep them in repair so they will not have to order new machinery.

2. Expendable Operating Supplies:

a. *Mills having defense contracts,* and in need of such expendable supplies as shuttles, heddles, reeds, etc., can purchase them in normal quantities without preference certificates under Order P-53. Order what you want in the usual way. The rating of A-10, under order P-53, is supposed to cover the manufacturer of maintenance parts. But if you are refused delivery, apply to your contracting officer on form PD-3-A, and if he is convinced you can't get the supplies any other way, he will make an effort to get you a higher rating.

b. *Mills without defense contracts,* are supposed to be able to get operating supplies without any certificate, just as mills with defense contracts get them. If you are refused delivery, then write to the TB, explaining your problem and making application on form PD-1-A for a higher rating.

3. Mills Having Their Own Repair and Maintenance Shops:

a. *Mills having defense contracts,* and owning and operating their own maintenance and repair shops, should ask the TB for a form PD-88. Fill out the form and submit to TB for a rating under Order P-53. If you are given this rating, ask for a supply of Order P-53 forms, so that you can submit one with each of your orders to your metal supplier. A-10 should deliver all ordinary metals in reasonable quantities. Reasonable quantity means a minimum working inventory. If you need very scarce metals, such as brass, chromium, aluminum, copper, it is doubtful if A-10 will deliver them. In this case, apply to your contracting officer on Form PD-3-A, asking for assistance with a higher rating.

b. *Mills without defense contracts,* desiring to order metal for their own repair and maintenance shops, should follow exactly the same procedure as mills with defense contracts: that is, ask TB for a supply of form PD-88. Fill out and submit with your order to your metal supplier. This form calls for an A-10 rating, and should deliver a reasonable quantity. In this case, if you don't get results, you have no contracting officer to appeal to. Make your application for help to TB. Your chances are about as good as the A-10 rating.

4. Plant Expansion:

a. *Mills having defense contracts,* and wishing to expand their plants, including new buildings, new machinery, etc., will find it virtually impossible unless they plan to manufacture some hard-to-get textile item, such as duck, which can be had from no other source. The reason is that WPB believes that sufficient textile mill equipment to produce all war needs, with civilian supply curtailed, is already in place and in operation. But if you have a good proposition, go to your contracting officer personally and tell your story. If he approves, he will send you to Washington, and tell you whom to see. Army and Navy would have to sell your proposal to TB. Don't bother about any forms until negotiations are completed. If you should get a rating on a plant expansion, it probably would be as high as A-2 or A-3.

b. *Plants without defense contracts,* provided they have the reputation and experience, would have about the same chance of getting a rating for plant expansion as would a company that already had a contract provided they want to manufacture some textile that can't be procured in sufficient quantity by Army, the Air Force, or the Navy. Put your proposition to the Quartermaster General of the Army, the Materiel Division of the Air Corps, or the Bureau of Supplies and Accounts of the Navy. Remember that it is the Army and Navy who decide what is wanted; then it is TB's job to get it.

5. New Machinery to Increase Production:

a. *Mills with defense contracts,* and wanting new machinery, should call personally upon their contracting officers. If contracting officer approves, he will recommend you go to Washington, and see the Quartermaster's officers. QMC, if it approves, will go to TB with the proposition. You can't get it without the backing of the Army or Navy. Your product must be a military necessity.

b. *If you have no defense contract,* but desire new machines to increase production, you have TB as your only recourse, and your answer almost certainly will be No.

6. Replacement of Obsolete Machinery:

a. *Mills having defense contracts,* and having machines so badly worn out or outmoded that they are slowing production, should apply on Form PD-3-A for a special rating, sending it to their contracting officers. You will have a pretty good chance of getting the rating if your machines are actually lagging in production. But if they are merely old, and are still doing pretty well, it is clear that replacement would take too much metal to justify the replacement. You probably cannot get any rating merely for replacing old machines.

b. *Mills that have no defense contracts* would find it practically impossible to get a rating on replacement of *any* machinery, except in extraordinary circumstances. You have the privilege of applying to TB on a Form PD-1-A.

7. New Machinery for Balancing Production:

a. *Mills having defense contracts,* can get occasional or small numbers of new machines for balancing production if potential appreciable increase in production can be shown. This should be particularly true in the case of twisters, and combers. If you need this type of thing, apply to your contracting officer on Form PD-3-A for a special rating.

b. *A firm having no defense contract,* should apply to TB on Form PD-1-A, but the chances of success are small.

8. Dyestuffs:

a. *Mills with defense contracts:* The chief shortage in dyes is in the vat classification. If you have a defense contract, and cannot get vat dyes, report by letter directly to the TB, with a duplicating letter to your contracting officer, who will take the matter up with the offices of the Quartermaster General, who in turn will contact TB. Vat dyes are under informal control, so that defense gets first crack at available stocks. This is a form of allocation. Finishing plants using vat dyes are now asked to report monthly requirements to TB. If you have difficulty getting other than vat dye, write directly to your contracting officer. In either case, there are no preference rating certificates to fill out, as these materials are not subject to priorities control.

b. *Mills without contracts,* wanting dyestuffs, can report by letter to the TB, but with small chance of success.

9. Manufacturing Supplies — Mills having defense contracts, and wanting starches, gums, etc., not on the critical list but hard to get, should not fill out any forms but should write to TB. The same procedure is suggested for mills without defense contracts.

10. Yarns:

a. *Mills having defense contracts,* fill out Form PD-3-A for whatever yarn is necessary, and send to contracting officer. A rating of A-1-I, which is carried by cloth in general, will be extended to cover the yarn.

b. *Mills not having defense orders,* apply to TB.

11. General Suggestions:

a. In several instances above, you are informed that, without a defense contract, your chances of getting a rating are small. If failure to get materials actually will disemploy many of your workers, it is suggested that you appeal to the office of Sidney Hillman, Director of the Labor Division, WPB, Washington.

b. Don't sit back in awe of defense and military officialdom, and wait for them to spring all the bright ideas. If you can make a material faster or better than it's being done, speak up. If you have a material that will substitute for something now hard to get, tell the Army. Tell the Navy. Tell the Marines!

WPB TEXTILE FORMS AND ORDERS

"PD" Forms *

Form Number		Made Out By	Sent To
PD-1-A	Application for preference rating. Rating granted by stamping approval on application by OPM.	Defense Contractor	Wash.
PD-3-A	All war orders including Lease-Lend.	Army or Navy	Mfr.
PD-6 Revised	Tabulated report of extensions of Preference Ratings made pursuant to General Preference Order No. P-2.	Manufacturer	Wash.
PD-19A	Customer's sworn statement of metals.	Manufacturer	Mfr. & Wash.
PD-19B	Supplier's statement of compliance on metals.	Manufacturer	Wash.
PD-24	Priorities critical list — revised monthly.	Priorities	Mfr.
PD-25	Report of needs for scarce materials, initial form quarterly.	Manufacturer	Wash.
PD-25-a	Report of requirements for scarce materials needed under defense supplies rating plan.	Manufacturer	Wash.
PD-25-b	Report of extension of defense supplies.	Manufacturer	Wash.
PD-25-c Revised	Customer's certificate covering possession of defense orders.	Defense Buyers	Mfr.
PD-25-d	Customer's certificate reporting individual identified orders.	Defense Buyers	Mfr.
PD-77	Report of raw silk stocks.	Silk Mfr.	Wash.
PD-78	Report on raw silk inventories.	Silk Mfr.	Wash.
PD-102	Mill application for allocation of rayon yarn.	Rayon mill	Wash.
PD-103A and B	Producers report on rayon yarn inventories.	Rayon yarn producer	Wash.
PD-104	Producers report on rayon yarn output.	Rayon yarn producer	Wash.
PD-106	Allocation of rayon yarn.	OPM	Mfr.
PD-110	Producers report of cotton linters and cotton seed (monthly).	Producer	
PD-122	Distributors report of cotton linters (monthly).	Distributor	

"P"—Priority Orders *

Order	
P-6	Defense supply rating order. Assigns preference rating A-10 to certain deliveries.**
P-22	Repair and maintenance plan A-10 and A-1-1.***
P-53	Textile machinery and equipment. Maintenance and repair order. Assigns rating A-10.

"M"—Materials Distribution Orders *

M-12	Cotton linters.
M-19	To conserve the supply and direct the distribution of chlorine.
M-22	To conserve the supply and direct the distribution of silk.
M-22 Amended	Assigns A-10 rating to contracts and orders by the Army, Navy and Weather Bureau for silk cloth, thread, etc.
M-26	To conserve the supply and direct the distribution of silk waste, silk noils and garnetted or reclaimed silk fiber.
M-36	Manila fiber and manila cordage.†

* These forms and orders were issued by OPM but they and all new forms, orders and amendments, are now "WPB" issues, from the priorities section of the new Division of Industry Operations.

** Consumers of materials who produce manufactured products of the shelf-goods variety for use by defense plants can secure an A-10 preference rating for the percentage of their total sales used by defense plants by qualifying under the Defense Supplies Rating Plan, using Form PD-25-a.

*** General — covers all war industry.

† Classes A and B of manila cordage are permitted sold only for use on war orders, marine use, oil pipe lines, and mines. Lower grades only may be sold to civilians. There are no "L" (Limiting) Orders or "E" (Equipment) Orders in Textiles.

SUBSTITUTION TEXTILE WAR MANUAL

How to Meet Shortages of Fibers, Chemicals, and Metals

SHORTAGES of many of the raw materials normally employed by the textile industry and by textile machinery builders call for substitution, conservation, reclamation, and simplification. The substitutes listed below for chemicals, fibers, metals, and other materials which are scarce have been compiled from various sources. Certain of the substitutes have proved superior to the materials formerly used; others are less satisfactory, but are useful expedients. Some of the substitutes cannot be employed for all the purposes served by the material they replace, but only for such purposes as their properties make them suitable. A few of the substitutes are valuable for replacing another material for a specific purpose because of one characteristic. Some of the materials listed can be used in place of another material for certain purposes and can be replaced by the other material for other purposes, thus permitting each to be employed where it is best suited.

Many of the materials listed as substitutes are themselves scarce; but, in general, are more plentiful than the material for which they are suggested as replacements. The author has included only those substitutes which to his knowledge have actually been employed to replace the materials listed. Undoubtedly there are other satisfactory substitutes for those and other scarce materials. Further information on substitute materials will be published in TEXTILE WORLD as rapidly as it is made available. Any readers who know of other suitable substitutes are urged to communicate that information to Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York.

Conservation, reclamation, and simplification are three matters which will become increasingly important in textile mills during the coming months. Thus far there is little organized information on those subjects. The Bureau of Conservation, Office of Production Management, Washington, D. C., has been established to bring under one head all work on conservation, substitution, alteration of specifications, salvage, and simplification of design which previously was done in several different agencies. This Bureau has issued several bulletins on salvage, reduction of waste, simplification, etc., some of which contain information of general or specific interest to textile manufacturers. Following the list of metals and substitutes which appears below are three notes on hard surfacing, metal spraying, and welding as applied to conservation and reclamation of metal parts. Other measures which can be taken to conserve equipment and supplies include: (1) setting up or revising of machinery inspection, cleaning, lubrication, and overhauling schedules; (2) establishment of waste-elimination programs; and (3) training of employees in proper handling of quills, bobbins, and other supplies to avoid unnecessary damage or breakage.

I. FIBERS

COTTON (for tire cords)—High-strength viscose or acetate rayon.

COTTON (Nos. 1 and 2 Pima)—Nos. 3 and 4 Pima; combed peeler.

JUTE—Cotton (mildew-proofed); cotton treated with graphite and oil; Fiberglas.

LINEN—Fiberglas; high-strength cotton; rayon (acetate, cuprammonium, viscose—regular and high strength; continuous filament and cut staple); Saran.

MANILA FIBER—Rayon (high-strength viscose or acetate).

SILK—Cotton (regular, high-strength, or specially treated); Nylon; rayon (acetate, cuprammonium, viscose—regular or high-strength); Saran; Vinyon.

WOOL—Casein fiber; rayon staple; redwood bark fiber; soy bean fiber.

MISCELLANEOUS—Aloe, coir; istle; milkweed; nettle; palm fibers, such as piassava; pita; ramie; sansevieria; and sisal are among the lesser used fibers which have been suggested as substitutes for various scarce fibers.

II. CHEMICALS

ACETIC ACID—Ammonium sulphate; formic acid; lactic acid; sulphuric acid; white vinegar.

ALBUMEN—Thermo-setting synthetic resins.

CASEIN—Soy bean protein.

CHLORINE—Perborates; peroxides; sodium chlorite.

FORMALDEHYDE—Aluminum acetate; aluminum formate; copper sulphate; lignin sulphate; sodium bichromate; zinc acetate; zinc sulphate.

GELATINE—Casein derivatives; dextrins with or without resin binders and lubricating and softening agents; polyvinyl alcohols; synthetic resins; water-soluble cellulose derivatives.

GUM ARABIC—Dextrins with or without plasticizers, such as glycerine or glue, or synthetic resins; vegetable gums prepared from domestic starches by chlorination.

GUM TRAGACANTH—Alginates; solu-

ble cellulose ethers, such as methylcellulose; vegetable gums prepared from domestic starches.

GUM TRAGOSOL (Locust Bean Gum)—Synthetic resin dispersions; vegetable gums prepared from domestic starches; water-soluble cellulose ethers; water-soluble resins.

JAPAN WAX—Hydrogenated fats with or without blending with domestic waxes and resins; natural waxes from South America.

OLIVE OIL—Corn oil; cotton seed oil; diethylene glycol; dipotassium phosphate; mineral and coconut oil blends; peanut oil; tall oil; soy bean oil; synthesized oils made by splitting animal or vegetable oils, separating fatty acids by fractional distillation, mixing in desired proportions, and converting into glycerol esters.

PINE OIL—Synthetic pine oil.

SAGO FLOUR—(See Tapioca Flour).

SULPHONATED FATS—Cationic softeners.

SULPHONATED OILS—Catonic softeners.

TAPIOCA FLOUR—Cornstarch; modified starches (chlorinated, acetylated, oxidized) with or without plasticizing and softening agents, such as sulphonated oils and fats, glycerine, glucose, cationic softeners, glues or gelatins; potato starch; wheat flour.

VAT DYES—Developed; mineral; naphthol; pigment; sulphur; vegetable dyes.

III. METALS AND RELATED MATERIALS

ALUMINUM—Acrylic resin; brass; cast-iron finished with enamel, Formica, Masonite, chemical stoneware; copper electroplated with tin; iron; molded phenolic plastic; porcelain enamel; spun steel; steel; teakwood; welded steel plate.

BERYLLIUM COPPER—Laminated phenolic plactics.

BRASS—Phenolic resin; plastics; steel.

CAST IRON—Maple wood.

CHROMIUM PLATING—Baked enamel; Bonderizing; Sheradizing; white bronze plating.

CORK—Pressed felt.

GALVANIZED IRON—Baked enamel; Bonderizing; Sheradizing.

LEATHER—Pressed felt.

MONEL METAL—Chemical stoneware; concrete; Duriron; glass linings; Haveg; iron; lead linings; porcelain enamel; protective coatings; silicon bronze; soapstone; wood.

NICKEL-PLATING—White bronze plating; Bonderizing; Sheradizing.

RUBBER—Chemical stoneware; Haveg; plastics; pressed felt; protective coatings; synthetic rubber; wood.

SHEET METAL (Ferrous)—Canvas; Fybr-Tech (wood veneer core with vulcanized fiber sheets bonded to one or both faces); Marinite; Masonite; plywood; vulcanized fiber; wood.

STAINLESS STEEL—Chemical stoneware; concrete; soapstone; Duriron; glass linings; Haveg; iron; lead linings; porcelain enamel; protective coatings; steel; wood.

ZINC (Die Castings)—Cast iron; high-grade bronze; molybdenum—iron casting.

* * *

BALL BEARINGS—Oilless bearings; plain bearings.

ROLLER BEARINGS—Oilless bearings; plain bearings.

BUSHINGS, BRONZE—Cellulose acetate plastic bushings.

IV. CONSERVATION METHODS

HARD-FACING—Hard facing of textile machine parts which are subjected to abrasion or severe wearing action often will result in fewer breakdowns and longer life.

A few typical examples of parts which can be hard faced with an abrasive-resisting alloy, such as a chromium tungsten alloy, are heddles, cams and fallers on wool-combing machines, camshafts and crankshafts, stitcher cams on knitting machines, and winder trumpets.

METAL SPRAYING—For protecting and thereby conserving metal surfaces, more extensive use of metal spraying has been recommended; among metals which can be applied in molten form by this technique are aluminum, brass, bronze, cadmium, copper, lead, Monel metal, stainless steel, steel, tin, and zinc.

WELDING—Repairing of broken cast-iron and other machine parts by welding frequently is feasible; it has been estimated that cotton mills can profitably employ one full-time welder for each 1,000 looms or the equivalent number of spinning frames based on an average of 40 spindles per loom.

V. SIMPLIFICATION

Further means for meeting shortages are found in two principals which are briefly identified by the Bureau of Industrial Conservation as (1) simplification, and (2) salvage.

SIMPLIFICATION involves cutting down variety and so not only saving in inventory but also side-stepping items which may involve the scarcer materials. Textile lines will involve reduced color ranges, fewer styles, lesser variety in packages. Some steps along these lines have already been taken.

SALVAGE involves saving of discarded materials and the return of them to proper consuming channels. This covers not only usual textile wastes, but metals, paper, rubber, etc., which might ordinarily be left out on the back lot to rot or rust.

LABOR TEXTILE WAR MANUAL

How Wartime Labor Problems May Be Solved

ALL OF THE PRE-WAR labor control agencies are still in effect, and new emergency control agencies have been added. Some of the old controls are practically inoperative, and some are partially substituted by the new ones.

The old labor agencies include Conciliation Service, Walsh-Healy Public Contracts Board, Wage-Hour Division, and National Labor Relations Board.

The new emergency labor agencies are National War Labor Board, WPB Labor Division, U. S. Employment Service (Federalized), and Labor Section of the Quartermaster Corps.

Before setting forth problems, it is in order to describe the agencies briefly, both old and new:

I. LABOR AGENCIES AND THEIR FUNCTIONS

A. *Conciliation Service*, a division of the Labor Department, directed by Dr. John R. Steelman, has no administrative or judicial authority; can only conciliate industrial disputes when invited to do so. It has a large staff of conciliation commissioners working in all parts of the country who are subject to call.

B. *Walsh-Healy Public Contracts Board*, a division of the Labor Department, requires Government contracts to contain clauses setting maximum hours, minimum wages, and working conditions. These are to be enforced by the Secretary. This Board appears to be defunct, all its members having gone, leaving only Maj. Robert Campbell as chairman, and L. Metcalf Walling as Administrator. It might be re-activated after the war.

C. *Wage-Hour Division*, of the Labor Department requires a minimum wage of 30 cents per hour in interstate commerce, with rates up to 40 cents set by the Administrator on the recommendation of industry committees; issues regulations on learners and sub-standard workers. The Administrator is Thomas Holland, recently chairman of the Walsh-Healy Board.

D. *National Labor Relations Board* protects labor against coercion and guarantees collective bargaining. It has no jurisdiction over strikes, but it can prevent strikes by settling cases brought before it.

E. *National War Labor Board*, latest of the emergency agencies, was created by President Roosevelt to succeed the National Defense Mediation Board, which functioned with mediocre success during the first few months of the present World War. The new War Labor Board has almost unlimited authority to take jurisdiction and settle any industrial conflict which endangers war production. The Board's procedure is as follows:

1. Parties involved in labor dispute shall first resort to direct negotiations or to the procedures of collective bargaining.

2. If a settlement is not reached, an appeal shall be made to the Conciliation Service of the Department of Labor.

3. If not conciliated, the dispute shall be certified by the Secretary of Labor to the War Labor Board. But the Board may take jurisdiction on its own volition without certification if it so desires.

F. *WPB Labor Division* may render the same services to labor and industry as it did as a division of OPM, but its standing in the war hierarchy is much lower. Under OPM, the Division's director, Sidney Hillman, was also Director General equal in rank with William S. Knudsen, of OPM. Both Knudsen and Hillman were definitely moved down when SPAB with Nelson as Executive Director, topped OPM. Now Knudsen is out, having been made a three-star general and director of production, War Department; and Hillman's Labor Division, of WPB, is only one of six (possibly soon seven) divisions. The Labor Division includes Training Within Industry Branch, Defense Training Branch, Labor Relations Branch, Priorities (Labor) Branch, Negro Employment and Training Branch, and others, and the Labor Supply Branch, which embraces a maze of agencies: U. S. Employment Service,

U. S. Employment Service Regional Offices

Nearly every town has one of the 1500 local or 3000 part time offices of USES. One of these should be contacted first. Regional headquarters follow:

First Region: **Me., N. H., Vt., Conn., R. I., Mass. 120 Boylston St., Boston.**

Second Region: **N. Y. 11 West 42nd St., New York, N. Y.**

Third Region: **Pa., Del., N. J. Juniper & Chestnut Sts., Philadelphia, Pa.**

Fourth Region: **Md., Va., W. Va., N. C., D. C. 1011 Arlington Bldg., Washington. D. C.**

Fifth Region: **Mich., Ohio, Ky. Euclid Ave. & East 9th St., Cleveland, Ohio.**

Sixth Region: **Ind., Ill., Wis. Room 356 U. S. Court House, Chicago, Ill.**

Seventh Region: **S. C., Ga., Tenn., Fla., Ala., Miss. First Avenue & 19th St., Birmingham, Ala.**

Eighth Region: **Minn., Iowa, N. D., S. D., Neb. Federal Office Bldg., Minneapolis, Minn.**

Ninth Region: **Mo., Ark., Kan., Okla. 1006 Grand Ave., Kansas City, Mo.**

Tenth Region: **La., Tex., N. M. North Press & East Houston St., San Antonio, Tex.**

Eleventh Region: **Ariz., Utah, Col., Wyo., Mont., Idaho. 916 Patterson Bldg., Denver, Col.**

Twelfth Region: **Wash., Ore., Nev. Calif., Alaska, Hawaii. 785 Market St., San Francisco, Calif.**

Office of Education, and many others, criss-crossed and tangled beyond understanding. It is unofficially reported that the President or Nelson may set up one over-all Labor Office to unravel the tangle.

G. *United States Employment Service* was transformed on New Year's Day, from a group of 1,500 local employment offices with some 3,000 part-time branches in garages, stores and the like, into a "uniformly and of necessity nationally operated employment service." "USES" has these functions:

1. To receive applications of men, with their qualifications for jobs, and place them *where they are needed with the least possible delay.*

2. To engage in an aggressive campaign of recruitment of labor and special skills in the place where it is needed.

3. To cooperate with local draft boards. The military services and USES will try to determine the most effective balance of manpower between industry and fighting arms; the one must not encroach upon the other. The program is "work or fight."

4. To minimize migration of workers; if there is war work where people live, they should stay there.

5. To discourage raids by employers on other employers' workers. This will be difficult, because there is no ceiling on wages.

6. To work with many other war and Government agencies in an effort to develop a post-war program which will gradually take people out of military service and war jobs and put them back in peace work, with the least shock to workers and the national economy.

H. *Army's Labor Section*, in the Contract Branch of its Planning and Control Division of the Quartermaster Corps, has no authority to deal with strikes, or with wages, or anything at all, officially, but it does help industry with its morale problems. If you have seen a group of Army or Navy officers visiting a plant, the Quartermaster probably arranged for it.

II. ANSWERS TO A FEW SPECIFIC PROBLEMS

A. Additional shifts, the 24-hour day, the seven-day week. There is no law or regulation compeling any of these. Most plants do it on their own account, if they can. The War Production Board *could* force any kind of a production schedule. It could stop your materials; it could take over your plant for refusal to accept and fill orders. Up to this writing it has not taken any such action. Wage-Hour Division has a schedule for rotating four crews on a 24-hour operating basis. It's free for the asking.

B. One reason the Walsh-Healy Board does not seem to function is that the unions, and labor scarcity, have forced wages up above the Board's going rates almost everywhere. And both Walsh-Healy and the Wage-Hour law prohibit work over minimum week. But the terms of the Walsh-Healy (Public Contracts) and Wage-Hour are both in effect, and violators will find themselves in expensive trouble.

C. If you have a shortage of labor, skilled or unskilled, you can do one of several things about it. For skilled labor you can establish, or increase, your own training program, to which you can bring learners, which are still permitted under the Wage-Hour Law. The Government encourages the employment of Negroes; all the manpower of the country must be used. You can employ more women, which is also encouraged. You can appeal to your local office of the United States Employment Service which will first exhaust all the local possibilities, and if that does not supply enough, an effort will be made to bring workers from beyond your own region. USES will get assistance for you in "upgrading" or on-the-job training, or in apprenticeship. Above all you should *not* take the initiative in hiring workers away from other employers.

D. Don't discharge anybody because he or she is a foreigner, or a non-citizen. The Federal Bureau of Investigation has rounded up 3,000 dangerous non-citizens; nearly all the remaining 5,000,000 are loyal. Discharging or refusing to hire non-citizens only adds to the resentment upon which the Axis depends to slow our production.

E. If you have too many workers because your supply of material is curtailed, you should first notify the local office of USES, which is the clearing house for *all* employment or unemployment problems. There are many agencies in the Government dealing with these matters, but they are all connected with USES. One of them is Contract Distribution Division. If necessary write to or visit the nearest regional USES office. If you do not get action, write to Sidney Hillman, director of the Labor Division, WPB, Washington. There is or will be a job somewhere for every person capable of working.

F. In case of morale trouble, Washington advises you first to make an effort to find the cause and correct it. Employers are still responsible to workers, and workers to employers, as always. If it's just lack of enthusiasm on the part of workers, you can appeal, as already suggested to the Quartermaster Corps' Labor Section. To workers in remote places, the war, which comes to them only by radio and newspaper, is not a very real thing. They sometimes feel that they are being driven by their employers for selfish reasons. But when soldiers or sailors come into the plant and talk to them, it often changes their attitude.

G. On strikes and lockouts, there is little to be said except that the Government does not propose to permit them to interfere with war production. Your procedure is outlined on previous page under the head of National War Labor Board. No doubt the Board would deal with even a small strike, but you are urged first to try to settle it, and if you can't do it, appeal to the nearest office of the Labor Department's Conciliation Service, which costs nothing.

H. On almost any problem, priorities, morale, cooperation in the civil defense program, bond sales, plant safety campaigns, industrial health, you can appeal to your contracting officer from the Army, Navy, Air Corps, or whatever branch of the Government you are manufacturing for. It is a good idea to keep the confidence of your contracting officer. He is partly responsible for the delivery of your contracts; he is interested in you. He is your closest connection with Washington. He can accomplish more personally, and much more quickly, than you probably can.

PROTECTION TEXTILE WAR MANUAL

How to Guard Against Sabotage and Air Raids

IN TOTAL WAR, the paralyzing of industry becomes an important military objective for the enemy. The threat to textile mills warrants each to devise a form of protection in harmony with its size and facilities. Several textile companies have already set up complete programs to meet the emergency, and the authorities, both civil and military, are doing everything possible to spread the doctrine that preparedness is the best defense.

There are two danger sources—sabotage and air raids. There are several functions, notably fire and police protection, which are necessary in protecting a plant against both threats.

The Government, particularly through the Office of Civilian Defense, has prepared a wide variety of helps, based largely on the British experience. The dangers are itemized and suitable defense measures described in books and pamphlets available from the OCD through its many offices. Manufacturers of protective supplies are also helpful in explaining the use of their devices in protecting the industrial plant against the dangers which have sprung up about it from total war.

I. PROTECTION AGAINST SABOTAGE

Danger threats do not wait until enemy aircraft cross the coast line. Fifth Column activities on the part of foreign agents include efforts to damage essential industries through sabotage in the full range of all its forms. Whether this will ever be effective in disorganizing American industry will depend largely on the precautions taken for plant protection.

A. There are several relatively simple steps which may be taken to keep the saboteur out of the plant. These are:

1. Control of admittance to plant grounds by guards.

2. System of employee passes for ready identification.

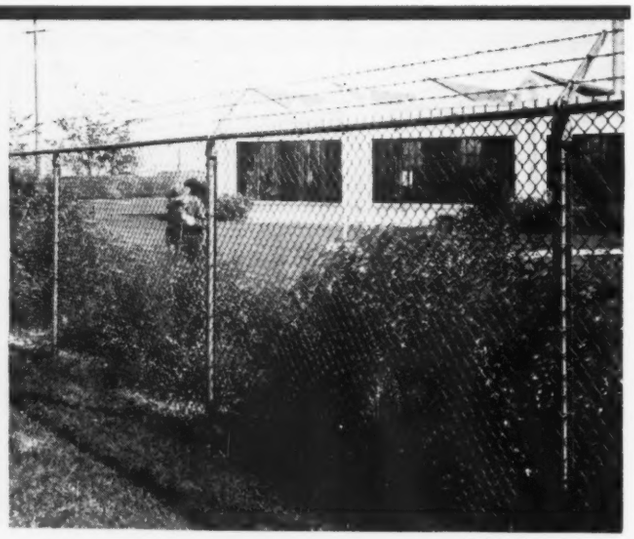
3. Some control of the movement of persons within the plant, especially if the various departments are spread out in a number of different buildings.

4. Fencing to make unwanted entrance into the plant grounds difficult or impossible.

5. Floodlighting to make it impossible for the saboteur to do by night what he might not be able to do by day. Electric-eye protection, and some of the newer forms of "glare" lighting are useful.

B. Check on vital spots where sabotage might take place from outside the plant is worthy of attention. Power plants, point of water intake, transformer stations, etc., are worthy of particular protection.

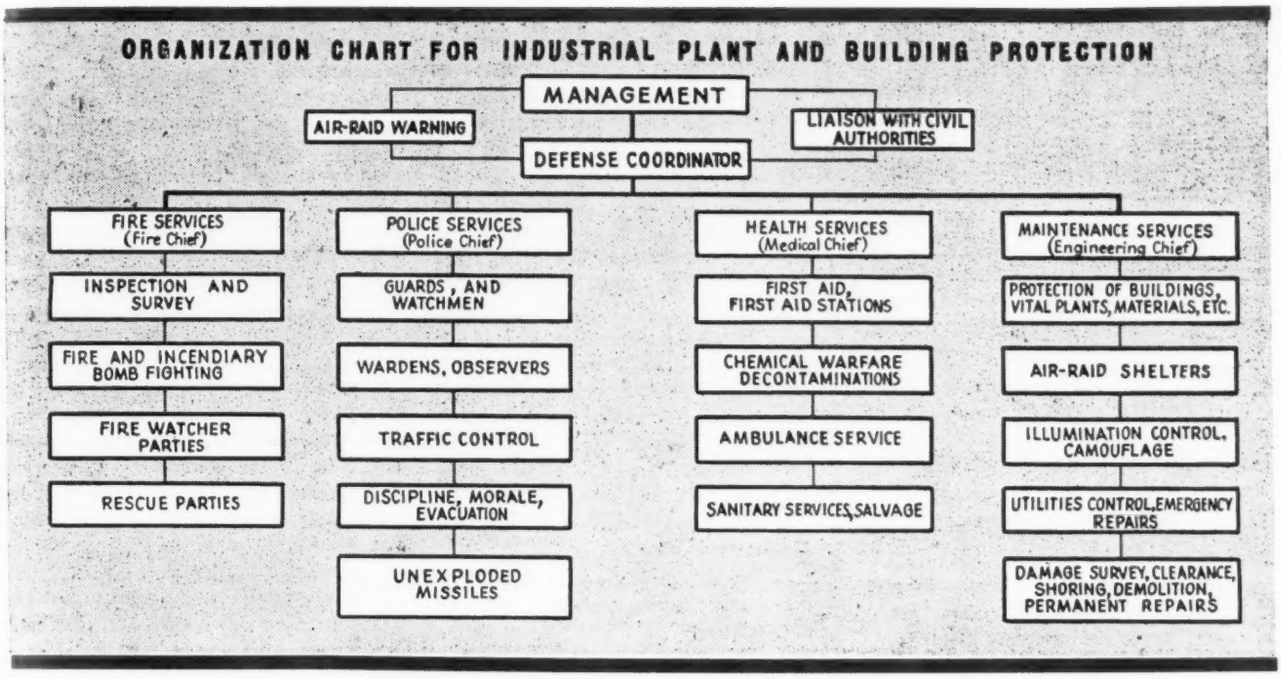
Westinghouse photo



Cyclone Fence Co. photo

(Left) "Glare" lighting is a form of flood lighting which puts the approaching saboteur in brilliant illumination while leaving the plant and its guards, from the saboteur's viewpoint, in darkness. The lights are set on posts several feet away from the buildings to be protected and fresnel lens is used to throw a flat fan-shaped beam of light. Photograph shows what an intruder would see of the plant he was approaching. *(Right)* A seven-foot chain link fence with its barbed-wire top is a difficult barrier for intruders to surmount. With a few simple changes such a fence may carry an electric charge if desired.

TEXTILE WAR MANUAL PROTECTION



II. PROTECTION AGAINST AIR RAIDS

The civil and military authorities who make up the OCD advised that preparation be made by industrial plants and communities within 300 miles of the coast for protection against air raids. This advice came prior to Pearl Harbor, but it has been repeated in more serious tone since then. This 300-mile coastal strip includes a large part of the textile industry. Because that industry will be occupied on essential military supplies and necessary civilian goods, through to the end of the war, it is reasonable that plans for protection be broad and effective.

A. Defense Organization—The recommended defense organization for an industrial plant heads up to a plant-defense coordinator, who must be a clear-thinking individual capable of taking charge in an emergency. He should have full responsibility for preparing plans, organizing and equipping squads, and training personnel. Four squads are recommended to render fire, police, medical and maintenance services. In detail they follow:

1. *Fire services.* The head of this unit will be responsible for the fire-fighting brigade and its equipment. If the plant has a fire chief he should head this service. This fire protective system should be independent of outside help, if feasible, but cooperation with and by the local municipal fire department is desirable. The mill squad is, of course, recruited from employees. They should be taught the approved methods of dealing with incendiary bombs and fighting fires, all of which information is readily obtainable from the OCD. A competent fire-service organization consists of:

a. A main observation post with such additional posts as may be necessary to cover the entire plant area.

b. Protective fire-watcher posts with necessary men, equipment and independent water supply.

c. Fire-equipment posts conveniently located but decentralized.

d. Adequate main and auxiliary water-supply system.

e. Fire-squads organized and ready to deal with incendiary and high explosive bombs and fires.

f. Direct communication system between fire watcher posts, squads and the fire chief headquarters.

2. *Police services*—The plant police chief should be in charge of all police activities. His is the responsibility for maintenance of discipline and for development of morale. He has charge of the guards and the watchmen, and the air raid warden and his assistants should operate under him. Duties may be subdivided as follows:

a. The guards and watchmen are responsible for all persons entering the plant area and are charged with protecting the plant from subversive activities as well as from theft. They control traffic and maintain clear routes for necessary vehicles. Handling all unexploded missiles, whether high explosive or incendiary bombs, is one of their jobs, and they should be given special training for this work.

b. The senior air raid warden is in turn in charge of other wardens and observers. They should be selected for calmness and presence of mind. They will handle evacuation of employees to air-raid shelters when this is needed. Wardens will make certain that all lights are extinguished during a black-out, excepting those needed to remain lighted for safety or other reasons. They will work in conjunction with the local aircraft warning system, and observe where bombs fall. Special observers may be placed at commanding points to report the approach of planes, the dropping of bombs, fires or other incidents of interest to the senior warden.

3. *Medical services*—These services should be under the plant physician, or if there is no such person, a practising physician from the locality. He has three major responsibilities:

a. He is responsible for organiza-

tion of first-aid service and for training of employees in such measures. As many employees as possible should be trained in first aid, but certainly an adequate number to operate conveniently-situated first-aid stations located throughout the plant area. Facilities for the removal of "non-walking" casualties to a hospital by ambulance should be arranged.

b. Sanitary services, from the collection of garbage to sewage disposal, must be watched to prevent disease and epidemics. Unsafe water supplies must be guarded against.

c. Salvage of such materials as may be used again and organization of the necessary treatment so that they may be used safely.

4. *Maintenance services*—The master mechanic or chief engineer should head this squad, and his assistants should be technicians who are familiar with all plant facilities, such as electricity, steam, gas and water. This squad has the following duties, several of which must be accomplished before the mill is really ready for an emergency.

a. The first duty is to survey the plant and make all necessary preparations for the protection of buildings, giving particular attention to vital equipment, materials and records. Temporary devices such as sand-bags, shoring, etc., may serve, if permanent improvements cannot be made.

b. Air raid shelters must be prepared for protection against both gas and bombs. In most modern factory buildings of over four stories there are suitable locations in the lower floors, but the room selected should have its ceiling reinforced to take a debris load of from 200 to 400 lb. per sq. ft.

c. Control of illumination during blackout or emergencies must be studied.

d. The problem of camouflage may be taken up by this squad, but should be checked by experts, since the opposite effect from that desired is sometimes produced.

e. Men should be stationed in pairs at various utility controls, such as telephone switchboards, gas, steam and water valves, and boilers, to remain at their posts during an air raid to handle any emergency. There should be written instructions on all strategic switches and valves. Setting up service systems in duplicate is desirable.

f. Repair crews should be organized to maintain plant facilities in event of damage.

g. Following an air attack a survey of the plant should be made at once. Weakened walls or foundations should be shored up or demolished, debris removed, and conditions restored to normal as rapidly as possible.

B. PROTECTION OF WORKERS—Plant executives would do well to familiarize themselves with the general types of bomb damage and with the general requirements of air-raid shelters, all of which is contained in a Civilian Defense pamphlet entitled "Protective Construction." Bulletin No. 1 of the Structure Series. When a demolition bomb explodes, all objects in its vicinity are first subjected to a blast of compressed air moving at high speed which tends to tear them apart or blow them away, and immediately afterward everything in the vicinity tends to be pulled toward the center of the explosion by a suction wave. This push-pull effect may be quite destructive, particularly to those buildings whose walls support the floors and roofs. It has been found that steel-frame structures are much more resistant to collapse than any other type, and even a very near hit may do very little structural damage. However, plaster may be stripped from ceilings and walls, windows and doors blown from fastenings and light partition walls destroyed. Fragmentation of the bomb case shoots out splinters in all directions at velocities several times those of a rifle bullet.

If the mill building is of steel or concrete frame it is relatively safe from anything but a direct hit by high explosive bombs and a suitable shelter within the building may be provided. Lateral protection should be obtained by blocking windows and door openings with concrete, brick, or in an emergency with sand bags. Basements offer excellent lateral protection from blast and bomb splinters, but care should be taken to make sure that the ceiling will sustain the weight of the building above it in event of a collapse. Danger of water and sewer mains bursting and possible collection of heavy gases at low points should be borne in mind in selecting a basement location. Buildings of old construction or vulnerable to fire are not safe.

Equipment recommended by OCD for a Fire-Watcher Station of four men

- 1 pair of leather or asbestos gauntlets for each watcher.
- 1 pair of dark safety-glass goggles for each watcher.
- 1 steel helmet for each watcher.
- 1 approved type mask for each watcher, for gas or smoke.
- 4 water buckets.
- 1 pump tank extinguisher.
- 1 fire axe.
- 2 bags, each filled with about 10 pounds of sand.
- 2 electric lanterns.
- 2 one-pound sealed packages of copper sulphate to be dissolved in water (1 pound of copper sulphate per bucket) for use on phosphorus
- 3 blankets and large safety pins.
- 1 crowbar.
- 100 feet of ½-inch line.
- 3 corrugated iron sheets.

OEM Defense photos

Effective means for extinguishing a magnesium incendiary bomb is to drop a sand bag squarely over it. In approaching the bomb, sand bag may be used to protect face from intense heat. Such protection is desirable when approaching close to incendiary.

C. Simple Camouflage and Blackouts—Newer textile mills, by reason of large areas of white concrete, light-reflecting glass, and light-colored heat-reflecting paints, become outstanding targets when viewed from the air. Simple forms of camouflage to reduce the visibility of such plant may be carried out principally be painting these more prominent features in darker colors and by screening the windows. Where heat deflection is a necessary factor, it is possible to make use of a special line of paints which are dark-colored and yet have an ability to deflect infra-red rays approaching that of aluminum paint.

As yet there is no national policy on blackouts, and the matter has so far been left up to local authorities. In blacking out plants producing war materials or other essential products the proper balance must be struck between (1) the safety of personnel and plants; and (2) maintenance of production at as high a rate as possible. In extreme cases it is possible to use blackout paint upon all windows and skylights, and operate the plant entirely by artificial light which does not escape outside of its walls. Where this is not feasible and a blackout is desired, it is obviously necessary to turn off the major units in the lighting system. Low-intensity pilot lights or special black-out lights may be installed to enable key men to attend to vital plant machinery and to enable personnel to reach shelters in safety when the regular lighting is extinguished. Signs with luminous paint are a useful expedient. A system of shutters or screens may be devised, particularly on the inside of the windows, which not only prevents light from being seen outside the plant, but helps to minimize the danger of flying glass splinters in event of an actual bombing nearby. In event of continued raids it has been found that windows in key positions may be maintained much longer if glazed with reinforced glass or with some of the various plastic materials. Shutters which may be made gas-proof aid in a blackout. Guards should be stationed at all plant entrances during blackout. The book, "Blackouts," issued by the Office of Civilian Defense, gives details of various methods which have been found possible in the blacking out of window and roof glazing.

Regional Directors of the Office of Civilian Defense from whom information and OCD manuals may be had

Region I—Dean James M. Landis, 9 Park Street, Boston, Mass.
Region II—Col. Franklin D'Olier, Port Authority Building, 111 Eighth Avenue, New York, N. Y.
Region III—Col. Clifton Lisle, acting, Enoch Pratt Library, 400 Cathedral Street, Baltimore, Md.
Region IV—Dr. Joseph C. Menendez, Room 206, City Hall, Atlanta, Ga.
Region V—Col. Robert S. Harsh, acting, 427 Cleveland Avenue, Columbus, Ohio.
Region VI—Maj. Raymond J. Kelley, 1200 South La Salle Street, Chicago, Ill.
Region VII—Col. Edward Le Roy Wilbur, acting, 620 World-Herald Building, Omaha, Nebr.
Region VIII—R. E. Smith, Room 1014, Majestic Building, San Antonio, Tex.
Region IX—Charles R. Page, 233 Sansome Street, San Francisco, Calif.

Bibliography on Plant Protection

"Protection of Industrial Plants and Public Buildings," Office of Civilian Defense, Washington, D. C.

"Suggestions for State and Local Fire Defense," Fire Series, Bulletin No. 1, Office of Emergency Management, Washington, D. C.

"Emergency Medical Service for Civilian Defense," OCD, Washington.

"Enrolled Volunteer Worker Groups for Civilian Defense," OCD, Washington.

"Protective Construction," Structures Series No. 1, OEM, Washington.

"Suggestions for Protection of Industrial Facilities," Federal Bureau of Investigation, Washington.

"Sabotage—How to Guard Against It," National Foremen's Institute, Deep River, Conn.

"Blackouts," OCD, Washington.

"Employee Organization for Fire Safety", National Fire Protection Association, Boston, Mass.

"Protection Against Gas," OCD, Washington.

British publications covering a wide variety of related subjects upon which many of the above American publications have drawn heavily for information, may be had from the British Library of Information, 50 Rockefeller Plaza, New York.

Water may be used on incendiaries if it is sprayed, rather than applied in a stream. Above is shown a two-man bucket-and-pump system. A stream of water should never be used on this type bomb as it may cause an explosion and scattering of burning fragments.

A demolition bomb which fails to explode remains a critical hazard until removed to a point where delayed explosion will do least harm. A bomb-removal squad often has delicate excavation work as well when the bomb buries itself in the earth.

How to Get a Subcontract

TEXTILE MILLS which do not make products similar to any of those used in substantial quantities by the military forces, by some other department of the Government, or for an essential civilian need, face the necessity of changing their production if they would gain security for continued operation and hope for allocation of scarce materials. If a mill cannot produce such Government goods as are indicated in an earlier article in this series, it may share in such production through a subcontract, or it may use a plant facility, such as the machine shop, for production of a non-textile item, usually also on a subcontract basis.

There is a growing list of new prime contractors. Carpet mills, put on a 50% curtailment basis so far as carpet wool is concerned, are turning looms to duck and blankets as they did in the last war. Labor authorities are interested in forwarding these changes as a step to avoid disemployment. One high-grade dress goods mill is now making army blankets—never before in its line. Tire-cord mills will make duck.

Subcontracting is open to yarn mills which may supply a weaving plant whose spinning equipment is inadequate, to weaving mills without proper finishing facilities, to finishers who may supplement the capacity of a prime contractor. A plant or portions of it may be leased to a prime contractor. The machine shop may turn out parts under subcontract; for example the machine shop of a large carpet mill is now busy on thermal tubes. Aids the Government offers for those seeking subcontracts follow:

I. The Contract Distribution Division of the Production Division of WPB has redoubled its efforts to spread the work since Donald Nelson took over. The Army and Navy, not liking to bother with inexperienced contractors, has resisted the placing of orders in communities even after they were certified. But Nelson, who is determined to put every possible wheel to work, now has authority to distribute military orders as he sees fit. Walter Wheeler has succeeded Floyd Odlum as chief of CDD, which now has over 100 field offices, for your convenience.

II. You don't have to see or write to anybody in Washington or anywhere else if you wish to sub-contract. Simply hunt up a manufacturer who is already a prime contractor and make a deal with him. CDD does, however, have a list of prime contractors which you might like to consult.

III. Be ready for constant changes and substitutions. New problems and shortages will turn up before current ones are under control. The essence of war is confusion.

IV. The Army's big headaches right now are shortage of cotton duck, shortage of raw wool, and shortage of burlap. Burlap plans involve conservation of what stockpile there is, and imminent substitution of osnaburg, heavy sheeting, and even shirting for the millions of bags for farm products and for sandbags. All of these shortages have brought forced production changes. New shortages will bring still others. The Materials Division of WPB, and its Bureau of Industry Conservation is studying the supply of materials constantly.

V. About getting into war production, when you are in doubt where to inquire, ask the Textiles, Clothing and Leather Goods Branch, R. R. Guthrie, Chief. This branch is directly connected with Mr. Nelson and his War Production Board, and it has a birds-eye view of the whole war textiles program.

FOR HELP IN GETTING SUBCONTRACTS, file information on your plant with your local office of OCD. There are 105 of these offices, of which we list the following which are in or near textile centers.

Albany, N. Y.—State Bank Bldg., 75 State St.
Allentown, Pa.—506 Hamilton St.
Atlanta, Ga.—Federal Reserve Bank Bldg., 104 Marietta St.
Baltimore, Md. — Federal Reserve Bank Bldg., Lexington and Calvert.
Bangor, Me.—363 Union St.
Birmingham, Ala. — Federal Reserve Bank Bldg., 18th St. and Fifth Ave.
Boston, Mass.—Federal Reserve Bank Bldg., 30 Pearl St.
Bridgeport, Conn.—Professional Bldg.
Brooklyn, N. Y.—16 Court St.
Buffalo, N. Y.—Traders' Bank Bldg., Main and Swan Sts.
Charlotte, N. C.—New Liberty Life Bldg.
Chester, Pa.—12-14 E. 5th St.
Chattanooga, Tenn.—James Bldg.
Chicago, Ill.—Federal Reserve Bank Bldg., 230 South LaSalle St.
Cincinnati, Ohio—Union Trust Bldg.
Cleveland, Ohio — Federal Reserve Bank Bldg., East 6th and Superior.
Columbia, S. C.—Manson Bldg., 1207 Taylor St.
Dallas, Texas—Federal Reserve Bank Bldg., Wood and Akard Sts.
Dayton, Ohio—Third National Bank Bldg., 32 North Main St.
Fall River, Mass.—27 South Main St.
Fort Wayne, Ind.—Utility Bldg., 114-118 E. Wayne St.
Hartford, Conn.—Phoenix Bank Bldg., 805 Main St.
Indianapolis, Ind.—Circle Tower.
Jackson, Miss.—Tower Bldg.
Knoxville, Tenn.—Goode Bldg.
Lancaster, Pa.—Woolworth Bldg.
Los Angeles, Calif.—Federal Reserve Bank Bldg., 10th and Olive Sts.
Lowell, Mass.—Sun Bldg.
Louisville, Ky.—Todd Bldg.
Manchester, N. H.—Amoskeag Industries Bldg., Stark St.
Memphis, Tenn.—2112 Sterick Bldg.
Milwaukee, Wis.—1124 First Wisconsin National Bank Bldg.
Minneapolis, Minn.—Rand Tower Bldg.
Montpelier, Vt.—12 State St.
Nashville, Tenn.—Stahlman Bldg.
Newark, N. J.—20 Washington Place.
New Orleans, La.—Canal Bldg.
New York, N. Y.—122 E. 42nd St.
Norristown, Pa. — Norristown Penn Trust Bldg., Main and Swede Sts.
Philadelphia, Pa. — Federal Reserve Bank Bldg., 925 Chestnut St.
Portland, Me.—433 Congress St.
Portland, Ore.—Federal Reserve Bank Bldg., 6th and Oak Sts.
Providence, R. I.—Industrial Trust Bldg., Westminster St.
Raleigh, N. C.—New State Office Building.
Reading, Pa.—615 Penn St.
Richmond, Va. — Johnson Publishing Co. Bldg., 5th and Cary Sts.
St. Louis, Mo.—Federal Reserve Bank Bldg., 411 Locust St.
Scranton, Pa.—First National Bank Bldg.
Seattle, Wash.—National Bank of Commerce Bldg.
Springfield, Mass.—95 State St.
Syracuse, N. Y. — Syracuse-Starrett Bldg., 224 Harrison St.
Toledo, Ohio—Spitzer Bldg.
Williamsport, Pa. — Susquehanna Trust Bldg., 120 W. 4th St.
Wilkes Barre, Pa.—Miners National Bank Bldg.
Wilmington, Del.—Penn R. R. Bldg.
Worcester, Mass.—State Mutual Bldg., 340 Main St.

REGULAR MONTHLY SECTION FOR FEBRUARY, 1942

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Catching Up With the News

THIS SEEMS TO BE an appropriate time, and this page an appropriate place, in which to catch up with a few of the thousand and one implications of the events of the last two months:

1. Our national attitude: The effect of Pearl Harbor upon our national attitude was swell. It made all of us realize, at long last, that this war is not just a means by which to make money, but a world revolution involving the destiny of Americans—as well as of Czechs and Poles and Britishers and Russians and all the other nationals whose countries have either suffered or succumbed. But now there is a chance that this initial effect may be lost. Since bombs haven't yet dropped on New York or San Francisco, there is the danger that complacency may return. That is the greatest danger we face today. That is the attitude which pervaded France and England in the early months of what they called a "phony" war—and which resulted in the fall of France and the almost but not quite (thanks to Winston Churchill) disintegration of the British Empire. The danger of complacency is even more threatening to us today than it was to those nations at that time. Why? Because: (1) We have enemies on both sides of us; (2) we still harbor a typically American complex that we can lick any nation in the world, with one of our hands tied behind us. Pearl Harbor jolted us a bit, but it didn't destroy that myth of invincibility. Must we wait for another sock on the jaw, which this time might be a knock-out blow, or can we eschew complacency as we would the devil and all his works—and never, never again let it get a toe-hold on our national attitude? If we can't do the latter, take it from this writer, we are licked.

2. Our national production-line: We have been kidding ourselves for nearly two years that the appropriation of more billions of dollars than the world has ever before even dreamed of, produces automatically airplanes and guns and ammunition and tanks and other war materiel. Actually, we have put to work only a small part of that cosmic fund. We still have ahead of us all the real production job. To date, we have just gotten tuned up. Fortunately, one man—Donald Nelson—has at last been put into supreme power. The reason he is the best man in the country for that job is that no sound observer has seriously suggested another man who would be better for it. That means a lot. He belongs to no faction, no pressure group. He doesn't go off half-cocked. He's easy to get along with. He's tough as turkey underneath. He has no illusions of grandeur. In fact, he's it. And it's up to every last mother's son of us to hold up his right hand and to see that he's given every last ounce of support. It's up to all of us to ignore the Fifth Column aspersions which will clutter around his name. It's up to each of us to refrain from the temptation of saying: "I hear Don Nelson isn't tough enough for the job"—and to remember that that's what they're saying and hoping in Berlin and Tokyo and Rome, and what they're trying to make us believe. Let's not be suckers.

3. Our national fight against inflation: The only important fact in this connection is that control of inflation is essential to winning the war. The legislation has been passed; Leon Henderson is now officially the price czar. That's better than having him continue as an outlaw Gypsy King—even though he was more colorful in the latter role. In this case, it is not so easy to take Leon Henderson as it is to take Donald Nelson. No important group distrusts the latter; many important groups distrust the former. But the hard cold fact remains that we *have* to take Henderson and to give him every last ounce of our support, just as we give it to Donald Nelson.

4. Our national farm problem: It is hard to take the result of eight years of national coddling of the farm bloc which came into full fruition as a national disgrace in the form of a clause in the price-control law which gives the Secretary of Agriculture a veto over actions taken by the price administrator. Fortunately, these groups responsible for this hold-up do not represent the attitude of the farmers of America. The latter will eventually repudiate their self-appointed spokesmen. Meanwhile, all we can do is to help support the enforcement of the law on the statute books.

FINALLY, it is evident from what we have written above that we advocate a complete all-out support of all national efforts to beat our enemies; also that we advocate that we continue to question any and all methods toward that end. Such questioning should confine itself to points on which *sure* information is available. When in doubt, do not criticize. When sure, do not fail to criticize. *That* is democracy at work and at war.

THE EDITOR SAYS

We Pick Up Pins Again

MY MOTHER was a thrifty soul. As the mother of ten children, she had to be. I can still remember her picking up pins, saving wrapping paper, laboriously untying knots in order to preserve the full length of string, writing notes on the backs of old bills and of advertising circulars. Thrift was not a mania with her; it was a necessary part of her life. She needed those things she salvaged.

I venture to say that most of the oldsters who read this page stemmed from just such a background of thrift.

But in the last two decades we as a nation have discarded all the copybook maxims; we have discarded all tendency toward thrift.

First, during the crazy 1920's, we spent wildly, on paper profits. Then as we tried to crawl out of the depression which succeeded inflation, we became engaged in a national process of destroying things, in an attempt to prevent glut. We killed young pigs; we plowed cotton under; we paid men *not* to produce crops; we curtailed man-hours and machine-hours of production, in an attempt to prevent bankruptcy.

With a large part of the world starving, and with no small percentage of our own people in dire want, we resorted to a policy of enforced scarcity.

And now, all of a sudden, we find ourselves, as a nation and as a world, crying for the things we threw away. We need old pots and pans; we have no tires for civilian use; we are rationing wool; we salvage old newspapers; we deprive our women-folks of the foundation garments by means of which they conceal the effects of over-eating.

Possibly the rationing of sugar will make some of those garments unnecessary. In fact, it is more than possible that many of the results of shortages and of salvage will be blessings in disguise. Maybe we can recapture the idea of thrift—and apply the wastage thus saved to the places where it is needed.

Right now, it is needed primarily for war purposes. The metal which can be salvaged from the thousands of junk machines in storage in textile mills represents one of this industry's greatest potentialities in helping the war effort. Economy in the use of all scarce materials will be of the same type of aid.

Someday, however, after the war is won, we shall be able to get back to a free basis on this problem. Let us hope that we shall not go back to the careless attitude of the 1920's, or to the brutal economics of the depression years.

Somehow or other, we must get back to fundamental values—back to the stage in life where it was helpful to plant two blades of grass where one grew before.

Somehow or other, we must recapture the idea of a nation rich in everything that man wants, and able to supply those wants. This country cannot only supply its 130,000,000 people with necessities; it can give them luxuries far beyond the dreams of some 100,000,000 of them today. And it can give both necessities and luxuries to another 130,000,000 people.

Economists tell us that the trouble is with distribution. If so, do we have to perpetuate mal-distribution? Isn't there enough intelligence left in us, as a race, to see that every man, woman and child will profit from the bounty of nature in this, one of the few remaining free lands of the world?

From an English Friend

MANCHESTER, ENGLAND

Editor, TEXTILE WORLD:

You have certainly done your level best to persuade your people that the maximum industrial effort was required. As a pilot in the late war you know what a tough proposition the Hun is. In the air, whether flying your planes or ours, our men and your Eagle Squadrons have proved their superiority. The same applies to your sailors and ours in the Atlantic.

You have no idea what a relief it is to me that after all the misunderstandings and futilities of the last two years, your country and ours are together in the fight. We shall both soon be on a total war basis, and I am quite certain that your industry is going to beat some records.

Your generation and mine were foolish enough, having won the last war, to allow aggressors again to raise their heads. Our countries are now absolutely united for victory and I hope we shall both be wise enough to stick together after victory and remain armed, and that we shall work together for increased world prosperity on a constantly rising scale, which I am absolutely convinced is within reach under joint direction.

W. A. GRIERSON

Each in His Right Place

The surest way to win this war quickly is for every person to contribute to his utmost *in his right sphere*. The surest way to delay victory is to have rigid rules which will force square pegs into round holes. The war won't be won by a violinist in a cook's job, or by a good textile technician doing Squads Right. It won't be won by a system which sends textile specialists out on construction jobs, while at the same time frantic calls go out for a large bunch of textile inspectors.

All Government agencies, as well as local service boards, should keep this vital thought in mind. All citizens should avoid the hysteria of the last war, and should realize that a man of military age, in civies, is not ipso facto a slacker. He may be playing an infinitely more important part in winning the war than he could in uniform.

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HATE: We heard a perfectly aimless radio discussion of whether we could fight this war without hate. Personally, we think a little good, clean hate might be usful. Let's forget about the soldiers and sailors and marines. They'll hate fast enough as they see their buddies killed. But we civilians might hate the treachery of the Japs, the deviltry of the Germans, and the cowardice of the Italians, enough to buy defense bonds, help the Red Cross, support the USO, refrain from hoarding, keep the production-line going, and will to be free. This is no kid-gloves war we're in; it's a vicious, outlaw attack on all we hold dear. If it makes each of us think: "The dirty ———'s," so much to the good. Because they are that, and more—much more than we can put in the pages of a family journal.

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MAKE IT QUICK: Sure, we'll win the war, eventually. But why not win it sooner than that? Every year, every month, every day, every minute, counts. The time element rests with our production-line. Right now, we should be on a 24-hour, seven-day week. Let's go.

Textile War Council: Pro and Con

The comments are mostly pro but as usual the cons will probably prevail

LAST MONTH we proposed in these columns a Textile War Council which would act as a coordinating body unifying the activities of all branches of the textile industry, and all textile associations, in an all-out effort to beat Hitler. This was a further step in our long campaign for such coordination, but was advanced as particularly essential at this time of national crisis.

As will be seen from the letters abstracted below, the idea has the endorsement of the majority of textile-association officials. They have subordinated their individual prerogatives to the opportunity for public service.

Despite that heart-warming fact, we have good grounds on which to base our pessimistic belief that the plan will not be put into effect at this time. The negative reaction stems mostly from the two thoughts that (1) until WPD and OPA procedure with regard to trade associations is clarified, such a move would be abortive; and (2) the appointment of industry committees, and particularly the committee of 21 in the cotton-textile industry, makes a Textile War Council unnecessary at this time.

We disagree on both counts. First, the absence of clear procedure in the Government agencies makes such a Council more, rather than less, necessary. Second, the industry-committee plan is just so much gentlemanly eyewash. It is not even an approach to an all-out offensive on the production front by leaders of the textile industry, working in cooperation with their associations and the executives of those organizations.

Our own private hunch is that the main obstruction comes from our old enemy, General Lethargy, a fifth-columnist of the first water. It was the General himself who delayed prosecution of a real textile research program for 10 precious years. That program has at last taken form, despite the General.

Similarly, we retain our naive confidence in the gradual development of the Textile War Council idea, and in the coordination of textile activities on a solid front. We shall fight for it as long as we can get priorities on enough paper to carry our message to the industry.

Meanwhile, we suggest that, as an intermediate step, the National Council of Textile Industries be enlarged to include other groups; and revitalized to the point where it will meet frequently and regularly, and attack fearlessly all problems involving textile participation in the war against Hitler. In that way, there will be a going organization ready to take over when General Lethargy's forces are beaten.

We repeat our battle-cry: Eventually, why not now?

And we append extracts from letters received to date.—*Editor.*

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"**MY COMMENTS** on your editorial in the January, 1942, issue are repetitious. Wherever I have found a trade association executive who would listen to me I have advocated a Council of all textile trade associations. While we all have varied purposes, there is really only one fundamental, and that is service. Service to the public and service to our members. We now have a more vital service, and that is to our Government.

"A Textile Council, such as you suggest, would afford the Army, the Navy, the WPD, the OPA and other agencies the medium through which information could be promptly correlated and translated into action.

"While there are many able trade association executives in the various branches of the textile industry, I feel confident that the unanimous selection to head the Council would be Dr. Claudius T. Murchison. With his unending duties and obligations he might have to be drafted for the job, but our Government and the entire textile industry need his experience and ability to head this organization.

"I am for your recommendation 100% and will aid in any way possible to quickly accomplish the formation and effective operation of the Textile Council."—FRANK E. SLACK, president, *Association of Cotton Yarn Distributors.*

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"**I HAVE READ** your editorial—'Textile War Council Needed'—with a great deal of interest.

"From my own experience I would say that the several textile associations have been cooperating for the general good of the country and the industry. However, an over-all set-up such as you suggest would simplify matters and undoubtedly expedite the handling of things which are sometimes unduly long in process.

"If the provision now contained in the Senate version of the Price Bill is ultimately enacted into law, and the WPD, OPA and other Government departments are permitted to work directly with trade associations, a Textile War Council would assume even more importance."—RUSSELL T. FISHER, president, *The National Association of Cotton Manufacturers.*

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"**I AM VERY DEFINITELY** for the Textile War Council."—ROY A. CHENEY, president, *Underwear Institute.*

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"**THEORETICALLY**, a Textile War Council would be an excellent thing. Whether it would be effective if it included hosiery, underwear, outerwear, and related branches, I don't know. It might be a fairly cumbersome council if all these interests were represented. However, the group that forms the National Council of Textile Industries might very well set up a Textile War Council to which other groups could be added as it seemed wise. In the present Price Control Bill before the Senate there is a provision by which the Administrator may enter into agreements with trade associations, etc. This may result in his adopting an attitude somewhat different from what he has had in the past. To the National Council there might well be added Arthur Besse's organization for wool, for which there is no real reason for exclusion or separate treatment."—CHAS. WHITNEY DALL, president, *National Rayon Weavers Association, Inc.*

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"**I HAVE READ** with considerable interest your Textile War Council editorial. I think this is one of the most constructive suggestions that have been brought to the attention of this industry for a long time, and I hope that Dr. Murchison will see his way clear to take steps immediately in organizing

such a council. I think a great deal of good can be had from such a council, for there are many problems coming up from day to day during this critical time that are overlapping in all divisions in this industry and which need over-all discussion and coordinated effort to be overcome. I think that Dr. Murchison has, in his coordination conference, the skeleton framework of a good Textile War Council; and it would be simple enough to add a few representative leaders of the industry to that framework.

"I really think that your timely and important suggestions should be taken up and put into active operation immediately, for speaking from a trade association executive's viewpoint, I feel that we are not in close contact with much of what is going on; and a war council would enable us to dovetail our individual group problems into the whole picture. We textile association executives are trying to do that; but I, for one, feel very keenly the need of frequent group conferences with other trade association executives in order to learn what problems are affecting other groups, and in that way to anticipate those which might come to our own groups. I have an idea that other association executives realize this need from experiences similar to those I have had and am still having."—MILDRED G. BARNWELL, executive secretary, *Southern Combed Yarn Spinners Association.*

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"**IN VIEW OF THE FACT** that the President indicated in his speech a few days age that a full 50% of industry's output must shortly be diverted to military purposes, it would seem that the council suggested by you would be a most valuable asset to the defense program."—HUNTER MARSHALL, secretary-treasurer, *North Carolina Cotton Manufacturers' Association, Inc.*

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"**IT OCCURS TO ME** that existing organizations are amply prepared to supervise all necessary procedure with respect to the requirements of the Victory Program, and I question the advisability of organizing a supreme Council since there is no particular conflict between the various branches of the textile industry which necessitate planning or direction for the purpose of improving the war efforts. In our own situation, for example, we have not yet been confronted with any serious problem since the capacity of the seamless branch of our industry is such that we can without any difficulty supply the requirements of all the armed forces, and we know of nothing that we could contribute to the other industries or if they could be of any assistance to us beyond the supplying of necessary materials, which can, of course, be obtained through priorities if required."—TAYLOR R. DURHAM, executive secretary, *Southern Hosiery Manufacturers' Association.*

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"**I READ** with intense interest your editorial proposing the formation of a Textile War Council. It demonstrates once more that however rapid the course of events, you always keep one or two jumps ahead."—CLAUDIUS T. MURCHISON, president, *The Cotton-Textile Institute, Inc.*

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"**UNDOUBTEDLY** the Textile War Council which you suggest would constitute a very powerful and helpful instrument in these times of emergency if permitted to organize and work along the lines which you suggest.

"You may, therefore, be assured of all the possible assistance that I can give you from the Carded Yarn Group in the further promotion of this idea."—E. O. FITZSIMONS, secretary-treasurer, *The Carded Yarn Group.*

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"**IT IS MY FEELING THAT,** while a Council such as you described undoubtedly has a great deal of merit, for various reasons affecting the industry as a whole, with which you are undoubtedly familiar, perhaps the formation of such a Council should be postponed until certain matters in connection with future general procedure have been clarified."—ALICE C. MOORE, secretary, *National Association of Finishers of Textile Fabrics.*

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"**IN GENERAL** it would seem to me that any step which will give the Government the benefit of the more experienced advice of the leaders in the textile industry would be sound. If such a council is formed I am sure you can count on the manufacturers in South Carolina for cooperation."—WM. P. JACOBS, executive vice-president-treasurer, *The Cotton Manufacturers' Association of South Carolina.*

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"**I AM AFRAID** you have always found me the least enthusiastic of any in connection with your various proposals to have an overall organization representing all the branches of the industry.

"Perhaps one reason why I am a little lukewarm toward the suggested Textile War Council is that I cannot see how it would function in connection with the present organization operating in Washington. If a reorganization takes place, I am not at all sure that some such council as you suggest might not be worth while, but as the thing is at present, I really can't see what such a council could accomplish."—ARTHUR BESSE, president, *National Association of Wool Manufacturers.*

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"**I AM WHOLEHEARTEDLY** in sympathy with your recommendation that we need some more centralized coordination of the textile trade associations with some council or other organization established to direct our activities and to furnish an aggressive leadership in matters affecting the industry as a whole.

"It seems to me that the logical agency for such leadership should be through the Cotton-Textile Institute, since it is the largest, and I hope that your editorial will inspire the establishment of some agency of that character."—T. M. FORBES, secretary, *Cotton Manufacturers Association of Georgia.*

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"**I HAVE BEEN IN THE MIDST** of what proved to be a most interesting experiment in cooperation between the Government and a trade association for the expediting of Government purchases. It might also be a miniature of what the entire textile industry could do if your suggestion for a Textile War Council was followed.

"The Materiel Division of the Air Corps of the Army at Wright Field, Dayton, Ohio, planned to purchase materials for the manufacture of 160,000 parachutes. For this, they required 12,500,000 yd. of parachute silk, 120,000 lb. of thread, 33,000,000 yd. of shroud line and 8,500,000 yd. of tape. We were asked to loan our rooms for the purpose of holding a series of meetings to which would be invited the manufacturers of the various products for the purpose of securing immediate bids. Lists of the names were supplied us by the Air Corps; we called the people together on 48 hours notice and the officials from Wright Field, present at the meeting, stated they accomplished in four days that which would ordinarily take them four weeks to do at Wright Field. In addition, we were able to secure the interest of several manufacturers who had not previously been used by Wright Field but who, from all appearances, were especially well qualified to produce the articles in question. An unusual opportunity was afforded the industry to ask questions 'on the spot.'

"Recently a man not in our industry, but who is familiar with the work of our association said that he felt the future field of associations during the emergency was primarily in the direction of informing and serving, a type of liaison body between Government, industry and

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Washington in War-Time

It's screwy, it's incredible, it's silly, and yet it's democracy—A few reflections

By DOUGLAS G. WOOLF

THOSE WHO HAVEN'T BEEN to Washington since Pearl Harbor should go there and see things—or, rather, they shouldn't.

This contradiction is but a reflection of Washington itself. You should and you shouldn't; you will and you won't; you may and you may not.

When you get back home, you'll be convinced that you'll never go there again, and yet that you'll probably go these next week.

That's Washington in war-time.

The town is bulging. *If* you have a reservation at a hotel two weeks in advance, and *if* you have a confirmation of that reservation, and *if* you are known as a good customer of the hotel in question, you are accorded the sublime privilege of checking your bag in the hotel's parcel room, and being placed 93rd on the list for the next room which some disillusioned traveler has finally vacated. Then, and then only, after the other 92 ahead of you get accommodations, you are finally ushered up to a hall bed-room at a price which would buy all the furnishings of the room, plus as much ginger-ale and sparkling water as you could possibly imbibe, with fixings.

Long after you have become the rightful tenant of the cubicle, you will answer repeated phone calls and assure the inquirers that Mr. Smith is no longer the tenant, that you don't know when he checked out, that you really don't care, and that, you're sorry, but you'll have to hang up. And later on, when you get your hotel bill, you'll find that you're charged with all the long-distance phone calls which Mr. Smith made just before departure. The only answer seems to be to make a lot of phone calls of your own just before you leave, and to let Mr. Jones, the next tenant, take them on his bill.

And if, as usually happens to an ordinary he-animal, you feel like a bite to eat at about 12.30 to 1.00, you get your pet "contact," invite him to lunch, and go the rounds. You stand in line at the Press Club, and give that up; you stand in line at the Washington, and give that up; you stand in line at the Occidental, and give that up; you stand in line at the Willard, and almost give that up, but gradually it has dawned on you that you *have* to get something to eat, somewhere, somehow. So you stand in line, and eventually you get a table—a spot in the middle of the floor, with apparently millions of other tables and customers crowding you into a spot which no man addicted to claustrophobia can possibly stomach, and yet you do. You sit and wait, and wait, and finally you get some soup. You may have ordered Potage St. Germain, but you get just plain soup. After another hour, you get the main course, something which the man three tables to the South ordered. You eat it. You try for the next hour to get coffee *with* your lunch. Just as you give up that hope, a waiter asks you what you want for dessert. You tell him you want nothing but a check. A half-hour later, you get your check—and pay it, only why you should, God knows!

Then, naively, you go to the phone booths and try to get OPM—Republic 7500. You get a busy signal. And from then on you get busy signals. If you are stubborn enough to stick it out for the duration, you finally get an answer which sounds like "Awfully sorry, man isn't here" and you realize the tired telephone operator is saying "Office of Production Management." But, as it eventuates, your first interpretation was correct. Your man isn't there. He's not at his desk; his secretary isn't there either; nobody knows or cares when the hell he will be back, if ever.

You try it again and again, and finally give it up. You go back to your hotel and try to get a reservation on a plane back home. You find that the 5, 6, 7, 8 o'clock planes, or thereabouts, are all booked. You go and get a train, a spot in the club-car which, unless you glue yourself to it, and resist the desire for food, is pre-empted by someone who has a perfectly good seat in another car but wants a Scotch-and-Soda. You arrive in Penn Station too late to catch the train to Westchester which your wife is meeting. You finally get home so exhausted and so disgusted that your wife almost goes to Reno. (The only reason she doesn't is that she can't get a Pullman reservation—or possibly she has lived with you long enough to know what a silly person a man is anyway.)

Then, at a dinner-party the next night, you tell all your neighbors just what happened at Pearl Harbor, how many airplanes are being produced per month, what Secretary Knox said to you, and why you think we'll eventually beat the Japs.

That's Washington. That's screwy. That's incredible. That's silly. And yet it's democracy.

THIS WRITER went through most of the spasms itemized above. But he didn't go back home before he had made a few "contacts." As a member of the McGraw-Hill Editorial Board, he sat in at an off-the-record dinner with Judge Patterson, Under-Secretary of War. As a member of the National Conference of Business Paper Editors, he attended breakfast, luncheon, and other conferences with General Lewis B. Hershey, director of the Selective Service System; Byron Price, Director of Censorship; Joseph Eastman, Director of War Transportation; Dr. E. A. Goldenweiser, chief economist of the Federal Reserve Board; Dr. J. Kenneth Galbraith, head of the OPA price division; Harvey Anderson, of the OPM Bureau of Industrial Conservation, and others of OPM.

All talks were off the record, but these comments are permissible:

1. If we had a dozen more men like General Hershey, in high places, the Axis would already be licked. He is one of the very few men we have met in Washington, during more than 20 years of pilgrimages to the Capital, who know exactly what they are doing, and why, and how. He is the answer to democracy's prayer. Just a country boy—a Hoosier farmer to be exact, the General has *all* the answers. If the Army and Navy would stop voluntary enlistments, or else channel them through the Selective Service System, all the anguish of the last war would be averted. Men of military age, who hold key positions in industry, would not be given the badge of slackers. Other men, important to industry, would not enlist in the Armed Services, through "social compulsion." On the other side, no branch of industry would be used as the refuge of would-be slackers. General Hershey, if everybody in Congress and in the

Armed Services will leave him alone, is the White Hope of a Democracy at War.

2. The Director of Censorship, Byron Price, knows what he is doing—principally because he doesn't know what he is doing. That paradox is explained by the fact that he has a completely open mind. All he wants to do is to prevent the enemy from getting useful information. He will probably have to spend most of his time preventing the Armed Services from withholding information which would be helpful to a mobilized American industry. We hope his say will gradually be accepted as final.

3. The Office of Price Administration, under its present set-up, is so completely academic and autocratic, that the hope of stopping inflation through that channel is practically nil. Every man whom we have contacted in OPA, with the single exception of Jim Davis, is a gloating sadist. And sadism is not one of the ways to win this war.

4. The margin between a war economy and a civilian economy is what is going to determine our way out. If we can go all-out in military production, and yet preserve enough of our way of life, we will win. From what we could learn in Washington, we would hazard the guess that we can devote, at the maximum, something between 50 and 55% of our total production to war production, and still continue as a democracy. Beyond that, lies the zone of complete militarism, and dictatorship. It would be of no profit to this nation to win a military victory, and yet find that in the "peace" we had lost our way of life.

We are in for untold hardships. We shall take them on the chin. We *must* take them. But every step as we go, we must remember that it is not the loss of tires or cars or corsets or silk panties which threatens us; that it is not the temporary victory of a very stupid Poo-Bah of the Rising Sun, backed by an Austrian Paper-Hanger and a me-too Caesar, that threatens us, but rather the loss of our own belief in the validity of American institutions that threatens us.

We can gain nothing, but lose all, by fighting this war in the Axis way. We can gain all, and lose nothing, by fighting this war in the American way.

And Washington—even in war-time—must learn that too. Each one of Washington's military and civilian bureaucrats must make that his creed. As a pattern, we offer General Hershey.

Textile War Council: Pro and Con

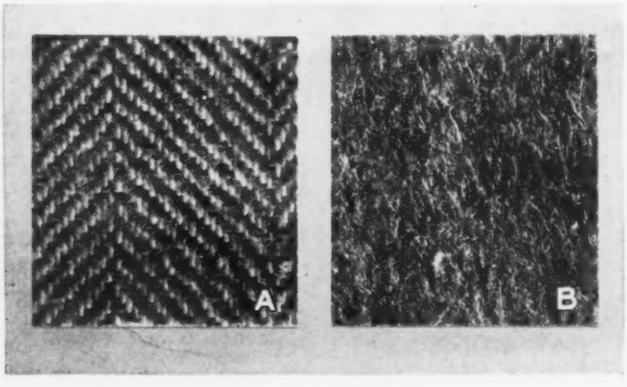
(*Continued from page* 94)

the public, as differentiated from any attempt to serve as an 'influencing' body. This policy certainly motivated our meetings last week with the result that the Army officials expressed their complete satisfaction with the arrangement and felt that the plan would save time and money if followed by other branches of the Government. On the other hand, we detected some advance apprehension that working with an industry association in this way might mean possible interference or obligation but from the comments they made at the end of the week it was evident that they were agreeably surprised to find that this was not necessarily a part of working with an association of business men.

"If this policy is to govern the proposed Textile War Council, I think it will mean a great deal. It should mean contact with every Government Department on the basis of providing a means of securing information and distributing it in regard to views held by any in the industry or in the Government. With that as a start we should be able to inspire confidence in the fact that our sincere wish is to do whatever is necessary to make the great textile industry of the utmost service in providing the things it can make for those who need them."—IRENE L. BLUNT, secretary, *The National Federation of Textiles, Inc.*

Ersatz: U.S.A. Model

NEWEST OF FIBERS to be offered to the textile industry is sequoia or redwood-bark fiber produced by Pacific Lumber Co., San Francisco, Cal. In blends with wool, the new fiber has been manufactured into blankets, overcoatings, and suitings. Such fabrics resemble all-wool materials in appearance and hand, but are said to be somewhat lighter in weight. A low-priced suiting fabric containing 40% of redwood-bark fiber in the filling is shown at A. A blanket fabric containing 33⅓% red-wood bark fiber and 66⅔% wool is illustrated at B. Other fabrics made thus far contain from 15 to 60% of the new fiber.



A

Suiting containing 40% of redwood bark fiber in filling

B

Blanket material cotaining 33⅓% redwood bark fiber

The idea of using this byproduct of the redwood lumber industry for textile purposes began with the discovery of the felting characteristics of the short fibers in the bark as they collected in mats and spun balls on the screen-belts which segregate the long fibers used by Pacific Lumber Co. for manufacturing an insulating material marketed as Palco Wool. This discovery led to development of processing equipment for recovering and segregating the short fiber, and also to a search for new markets for the material. The Palco research staff conducted a series of tests with a leading woolen company which showed that the redwood bark fibers could be blended with wool and then employed in manufacture of fabrics.

In the process for making the new combination fabrics, the short fibers from the redwood bark are combined with the wool fibers in textile mills. The resulting blend is carded, combed, and spun into yarn which can be woven or knitted into fabrics.

This new textile raw material will be produced by Pacific Lumber Co. at Scotia, Cal., and compressed into bales for shipment to textile mills.

Practical Garments for Women

WOMEN IN WAR INDUSTRIES and emergency services are turning to specially designed clothing for efficiency and comfort, though Government authorities at present are opposed to the uniforming of any groups outside of such official units as Red Cross nurses, air-raid wardens, canteen workers, etc. Designers, however, have been active in developing practical clothing in such variety as will permit women to buy on their usual basis of individual taste.

The accompanying illustrations show diverse types of garments suitable for many conditions of stress and activity. In addition to such as these there are on the market garments that can be turned readily from something suitable for evening wear in the home to use in an air-raid shelter. For example, in one garment a voluminous skirt may in part be thrown over the shoulders as a wrap without disturbing its skirt-like appearance. Among accessories for blackouts are noted such things as luminous fabric gloves, hats equipped with red crystal cats-eye reflectors, etc.

(Left) One-piece slack suit designed by Lillian K. Fritts, student at Traphagen School of Fashion, which won one of three first prizes in a recent showing of utilitarian garments in cooperation with the Cotton-Textile Institute and Free-for-All, Inc. Fabric is green novelty-weave cotton from Marvlo Mills

(Below left) At left, two-piece suit of brown-mixture fabric from Kenya Corp., for chauffeurs and air-raid wardens, designed by Natalie Finberg, Traphagen student. At right is another suit in brown twill, also from Kenya Corp. This was designed by Mildred Jimison and won a second prize at the Traphagen show

(Right) One-piece, blue poplin, utilitarian dress designed by Effie Graves, Traphagen student, which was one of three second-prize winners. Fabric from Kenya Corp.

(Below right) Two garments shown at the recent plastics exhibition in the Commerce Department Building, Washington, D. C., sponsored by Modern Plastics Magazine. Fabrics for the cover-all and the suit shown have been rendered fire and water resistant by treatment with suitable plastics

Self-Discipline a Must for Hosiery

Annual conference told of inflation threat, "telescoping" mills, salvage

A RECORD ATTENDANCE, approaching 500, turned out for the annual hosiery conference on Jan. 15 and 16 at the Waldorf-Astoria, New York, evidencing the industry's desire for information. This information, straight from the shoulder on the part of numerous speakers, made the hosiery industry conscious that supplying the armed forces and winning the war take precedence over all other considerations.

The dark side of the picture was painted for the hosiery audience by Alfred H. Williams, president of Federal Reserve Bank, Philadelphia. He pointed out that there was a gap of $21,000,000,000 between the $62,000,000,000,000 budget for 1942–3 and the probable sums that can be raised by the Government in its usual channels. He explained that an easy way of closing this gap is the selling of bonds to banks which, however, would be an inflationary step which might threaten present democratic institutions. To avoid this the country must buy more bonds and take heavier taxes. Banks must discourage loans not for defense purposes, and the Government must further cut its non-defense expenditures. Mr. Williams expressed his belief that this country can avoid inflation and virtual destruction of a free economy, only by the most severe self-discipline.

The other warning voice was that of John Shireman, chief, Silk Substitution Section and Hosiery Consultant, O.P.M., Washington, who explained what was meant by the "telescoping" of industry, and indicated that the hosiery industry should be prepared for such treatment. He indicated that the situation is going to be worse before it is better and that every manufacturer should prepare for a succession of 20% curtailments. He recommended that every mill operator at once survey his property and mark every item on the scale from one to five in relation to its importance. Everything in the first 20% which the manufacturer could lop off should be labeled Class 5. Then if the order comes to curtail 20%, a well-considered plan may at once be put into effect by eliminating Class No. 5. If it is necessary to reduce to 60%, then Class No. 4 goes. Should it go down to 40%, out go all items marked No. 3. Mr. Shireman also advised that the sales force be treated in the same way, and that the first 20% of the men to be let out be scheduled and that plans be made now for the redistribution of their territory.

THE HOSIERY CONFERENCE was open to executives of all hosiery mills, although sponsored by a group of five associations—the National Association of Hosiery Manufacturers, the Southern Hosiery Manufacturers Association, the Full-Fashioned Hosiery Manufacturers of America, the Keystone Hosiery Manufacturers Association, and the Woolen Hosiery Institute of America. Earl Constantine, president of the first-named association, presided at the first session. Mr. Constantine was congratulated on completing his first ten years as head of this association.

In his address to the conference, Mr. Constantine pointed out that despite the raw silk embargo, in effect five months of the year, shipments of women's full-fashioned goods for 1941 totalled about the same as 1940, and silk constructions were about 78% of the shipments. This emphasizes, he said, the gap which is to be filled this year. He forecast that the 1942 production of full-fashioned units would find rayon in first place, Nylon in second, and cotton a poor third.

By means of phonograph records which arrived only about 48 hours before the conference began, L. H. Allen, president of the National Federation of Hosiery Manufacturers Associations, Leicester, England, addressed the conference through the hotel's loudspeaker system and brought a message of encouragement to the difficult task of adapting the industry to war conditions.

A letter from William Stockhall, acting secretary of the British hosiery federation, listed the principal causes for readjustments experienced in the British industry as (1) demand for men for the services; (2) control of raw materials; (3) management of export trade; (4) Government contracts; (5) control of civilian supplies; (6) concentration of production by amalgamation of mills.

Major Douglas Hallam, D.S.C., secretary of the Canadian Woolen & Knit Goods Manufacturers Association of Canada pointed out that the first steps in reducing the amount of silk used in Canadian hosiery mills were taken in March, 1941, when 25% less than the usual previous amount was put into the works. Beginning in June, 1941, amount of silk used was cut to 50% of standard. However, on Aug. 9, 1941, the Canadian Government froze all silk in Canada not further advanced in manufacture than thrown. Thus the Canadian industry has been working seriously with rayon for some six months or more longer than the American industry. Major Hallam indicated additional Canadian restrictions, such as limitation of spring and fall lines to four shades, gun metal, black and white; and limitations on packing.

Carroll Wilson, director, Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, spoke on behalf of realism. "We might as well recognize," he said, "that industries and businesses will get hurt; so will individuals in the fighting forces. Many of both classes will be patched up, repaired, and started going again. Businesses will die. Individuals will be killed in the fighting forces and perhaps in the civilian ranks. The man whose business dies because of war necessities has a chance of building a new business. Fighting men or citizens have no such opportunity. Business, industry, labor, agriculture, or Government should not expect a safer existence than the man at the front."

F. S. BLANCHARD, textile consultant, Bureau of Industrial Conservation, OPM, led off a group of Washingtonians at the second session of the conference. He stressed the four functions of conservation: (1) substitution; (2) simplification; (3) specification; (4) salvage. He pointed out that there is a potential saving of 11,000,000 lb. of paper in current plans to increase the number of hosiery to the box, to eliminate envelopes, to eliminate fly leaves, bands, etc. Further conservation of dyestuffs and inventories is to be had in the limitation of color lines to four shades and complete elimination of so-called "special" shades.

A crowded room faced the speakers at recent Hosiery Conference

Lessing J. Rosenwald, chief of the Bureau of Industrial Conservation, stressed briefly the intense need of the metal industries for more scrap. He urged upon every mill the slogan "Get in the scrap", pointing out that every mill has its scrap pile and its obsolete machinery, and that it would be of incalculable benefit to the war industries to get these unused metals back into use. He introduced Mr. Glick of the Salvage Division who made an appeal to manufacturers to clean house. He urged strongly that every manufacturer appoint someone in his plant to carry out the metal salvage program. "Wreck where it pays," he said. "Wreck also where you just break even."

John Hamm, assistant administrator, Office of Price Administration, claimed that price control was aimed to prevent inflation and that prevention of inflation was one of the best guarantees of the continuation of our scheme of free enterprise. He expressed his belief that direct control of wages was not essential if the cost of living were controlled by ceilings on raw materials and on finished products. He saw little need for specific setting of retail prices.

Later in the meeting, John W. Mettler, president, Interwoven Hosiery Co., spoke in rebuttal on the matter of stabilizing wages. He pointed out that the labor content of goods determined whether or not labor was a factor in the setting of price. In hosiery, he said, labor cost amounts to 40%. He also pointed out that wages are set in a competitive market rather than based merely on the cost of living.

"Wages in our war industries," he said, "are highest in history. Workers want to improve their standard of living—if they can get more, why take less? War will make necessary a steady rise in costs, as it has always done before."

AT THE GROUP MEETING of full-fashioned hosiery manufacturers, David H. Young, senior technologist, Division of Textile Clothing, Department of Agriculture, explained the work which he has been doing since 1932 in the styling of cotton hosiery. He stressed particularly the fact that acceptable hosiery may be made from single cotton yarn, which helps the situation in the face of growing scarcity of the very fine numbers used in plies. He added also that the various irregularities of cotton hosiery might well be made a style feature and consequently a specific reason favoring its use. He indicated that his department was working on the matter of sizing cotton yarns for more even knitting. He added that where cotton yarn was used for Nylon reenforcement, more even dyeing effects were produced if the yarn was bleached. He suggested a stocking made from 40s singles, dyed blue or olive drab, as good hosiery for women in the services and he indicated that perhaps 5,000,000 women will be so engaged before the war is over.

Edmund L. Lauber, of the Sales Development Department, American Viscose Corp., spoke on increased use of rayon in full-fashioned hosiery, and particularly stressed the properties which he believed desirable in sizing materials for use on rayon.

"A size has several important functions," he said. "For one thing it should be able to hold twist and form a clear stitch. It should afford lubrication to the yarn for knitting and to be easy to apply. It should not be abrasive or corrosive to knitting machine parts, and should protect the fabric during handling. Finally, it should be easy to remove in scouring and should be reasonable in cost."

He stressed also the necessity of knitting or processing rayon under constantly controlled conditions of temperature and humidity.

Lieut. Col. Vere Painter, Philadelphia Quartermaster Depot, spoke on the army requirements for hosiery before the group meeting of seamless hosiery manufacturers. Lieut. Lawrence Smith, Naval Clothing Depot, Brooklyn, N. Y., spoke on the Navy's needs. Lieut. Smith pointed out that by June, 1942, the Navy Department will need 1,000,000 pairs of black cotton socks, 600,000 pairs of natural wool and cotton mixed, and 400,000 pairs of black wool and cotton mixed. He pointed out that the packaging of Navy hose was in bundles of ten for facility of inventory, and that it was essential that the socks be paired either by tacking or by non-rusting staples as the sailor buys his own hose for replacement and they must be delivered to him as a definite pair.

Mark Hawley, news commentator, of the Columbia Broadcasting System, spoke at the conference luncheon and a sound film of American Viscose Corp. "Rayon, a New Frontier of Progress", was shown.

Cotton Council Meeting Is Tops

Reflects progress in its promotion, scientific research, and other lines

PROVIDE FOR WAR but prepare for peace was the theme running through the three-day session of the National Cotton Council's fourth annual meeting in Jackson, Miss., Jan. 26 to 28.

It was evident in the major addresses on the first day when Oscar Johnston, president of the council, W. N. Banks, president of the American Cotton Manufacturers Association, and Edward A. O'Neal, president of the American Farm Bureau Federation, stressed this from the viewpoints of their respective organizations. It governed the various committee reports on accomplishments during 1941 and goals for 1942. This indicates one important point: that the National Cotton Council is actually functioning and producing in a forceful and constructive manner for the benefit of its six member groups.

Fred W. Symmes, Greenville, S. C., chairman of the Committee on Scientific Research, in presenting the report for his committee called upon Dr. L. C. Bass of the Mellon Institute, and members of his staff, and Dr. John T. Wigington, research director of the Cotton-Textile Institute. The statement of Dr. Bass on the results of scientific research undertaken by his staff, and other plans now under way, was one of the highlights of the convention.

Ed Lipscomb's combination pictorial and verbal report showed the outstanding results of his unusual genius in directing the promotion program under the joint auspices of the Cotton-Textile Institute and the National Cotton Council. It was said that he spent only $1,200 last year on paid advertising, but figured up in space rates he obtained over $2,000,000 worth of newspaper, magazine and movie publicity for cotton.

Also, comprehensive reports covering both accomplishments and purposes were given by Everett Cook, of Memphis, Tenn., on Foreign Trade; Robert Coker, Hartsville, S. C., on Cotton Production Efficiency; Garner Lester, of Mississippi, on Processing and Marketing.

DOVETAILING into the general theme was the showing on the evening of Jan. 27, by Virginia Jewel, fashion director of the Cotton-Textile Institute, of a group of styled war-work garments suitable for the 10,000,000 women who may be inducted into defense work.

Model showing cotton garment for war work in style show directed by Virginia Jewel of Cotton-Textile Institute

Jackson Daily News Photo

Oscar Johnston, president, National Cotton Council; Mrs. Mildred G. Barnwell, executive secretary, Southern Combed Yarn Spinners Association; W. N. Banks, president, American Cotton Manufacturers Association; and H. L. Gary, president, Delta Council, at Jackson meeting

Of particular note were the mechanics of the meeting. The delegates were given seats, desks, pads and pencils by State groups. Meetings began promptly and clicked right along. A full quorum was required at each session and a full quorum was had. Business was business and the usual convention elements of golf and social activities were out of the picture. The delegates who assembled from California on the West Coast to Virginia and the Carolinas on the East Coast were there to work out the problems concerning cotton, and they did. That is why after three years the National Cotton Council has such an inspiring record of achievement in promotion, legislative policy, scientific research, and other programs.

There was one unfortunate phase that can be remedied at the next annual meeting: There were far too few cotton manufacturers present. Those who failed to attend may count it a definite and personal loss that they missed these excellent sessions.

Mildewproofing Army Fabrics

Copper napthenate process employed in treatment of osnaburg for sand bags

AN INITIAL CALL for 7,900,000 sandbags has been issued by the U. S. Army Corps of Engineers. The bags, according to the invitation to bid, are to be made from cotton osnaburg, mildewproofed by the Willesden process or with copper napthenate treatments. It is believed that further quantities of mildewproofed osnaburg will be required for camouflage cloth and other purposes. So far as could be ascertained by the writer, neither the Willesden process nor the copper napthenate treatment has been described in any U. S. Government specifications or in any textile publication in this country. Inquiries made at the office of the Chief of Engineers elicited the reply that the Willesden process is being employed only for treating jute and that the copper napthenate process is being used for treating cotton, as well as jute. Considerable data on the copper napthenate process have appeared in British textile publications.

In the invitation to bid mentioned above it is stated that materials treated with copper napthenate shall contain not less than 0.8% nor more than 1% of copper computed as metal. U. S. Army Tentative Specification No. T-1452 and Amendment 2 lists the qualities which proofing agents must impart to textiles when they are processed against mildew attack and describes the tests to which the proofed textiles are subjected.

According to British Standard Specifications ARP 57 copper napthenate used for rotproofing must conform to the following requirements: (1) The copper content shall be between 10 and 13%; (2) The acids isolated shall have a molecular weight of about 200, assuming monobasicity; (3) When warmed to 100°C., the copper napthenate shall form a dark green viscous liquid containing no visible impurities; (4) The copper naphthenate shall not leave more than 5% of orange-colored residue when extracted with 30 times its weight of cold acetone.

In the United States copper napthenate is usually sold in the form of a solution or a water-miscible emulsion containing 8% of copper. For application to the fabric, the solution or the emulsion is diluted to a concentration of about 2% copper. It is believed that better results are obtained with a solution of copper napthenate in a petroleum solvent than with the emulsion. The same type of solvent employed in making the copper napthenate solution is used for diluting it to the proper strength for application. As the solvent is flammable, the usual precautions must be taken which are necessary in applying coatings or other compounds containing a volatile solvent of a flammable or explosive nature.

With Government demand for mildewproof fabrics certain to increase during the coming months, it is unfortunate that little authoritative information on mildewproofing Army fabrics has been made available in this country. The present article deals with one phase of the subject—mildewproofing cotton osnaburgs for sand bags. Further articles dealing in more detail with this and other phases are planned for future issues of TEXTILE WORLD. All readers who can supply additional data on mildewproofing materials, methods, etc., suitable for use on military fabrics are urged to communicate with Technical Editor, TEXTILE WORLD, 330 W. 42nd St., New York.

The method of applying the mildewproofing material consists essentially of immersing the fabric in the copper napthenate solution, removing the excess solution by passing the cloth through squeeze rolls, and drying to remove the solvent. The drying equipment must, of course, be of a type suitable for the purpose. It appears probable that some means for recovering the solvent volatilized from the cloth would be advantageous.

As the amount of copper napthenate absorbed by the cloth varies with different types of fabrics and different methods of application, a short test run should be made and a sample of the dried cloth tested to determine the copper content. Neither the proposal to bid nor the Army specification mentioned above gives any method for determining whether or not the copper content is within the allowable limits of 0.8 to 1%. Until an official method is adopted, the writer suggests use of one of the two methods of analysis for copper in textiles described in the 1941 Year Book of the American Association of Textile Chemists & Colorists.

Acme Photo

Anti-aircraft gun with sand bag protection

Synthetic Fiber Identification

Growing use of Nylon, Vinyon, and other synthetics calls for new test methods

NEED FOR STANDARD METHODS of fiber identification is well recognized by textile men. Considerable work has been done toward development of such methods by Committee D13 of the American Society for Testing Materials and by the A. A. T. C. C. The latest methods proposed by these two organizations are described in "A. S. T. M. Standards on Textile Materials" and in the "1941 Year Book of the American Association of Textile Chemists & Colorists." Still lacking, however, are standard methods for identifying Nylon, Vinyon, casein fibers, soy bean fibers, and glass fibers, and for distinguishing these from rayon and natural fibers.

Suggested methods for the identification of various types of synthetic fibers (including rayons) are presented in this article, which is reprinted from the December, 1941, issue of *Textile Research*, official publication of Textile Research Institute, Inc., and the Textile Foundation. It is believed that in their present form they will be a useful supplement to either the A. S. T. M. or the A. A. T. C. C. methods. Further, it should be possible to incorporate them, in whole or in part, in a more comprehensive system for identification of both natural and synthetic fibers

There is general agreement that success in identification of textile fibers calls for use of the microscope in combination with other tests. That is, chemical or staining tests should be confirmed by examination of the fibers under the microscope, and vice versa. The system of analysis suggested in this article has been compiled from various sources. Some of the tests included are well known; others are comparatively new and are not yet in general use. The author wishes to express his gratitude to the Wm. M. Grosvenor Laboratories, Inc., 50 East 41st St., New York, for checking the adequacy of certain of the newer tests. This laboratory also prepared all the photomicrographs used in this article. The photomicrographs show the longitudinal and cross-sectional appearance under the microscope (magnification 500×) of viscose rayon, cuprammonium rayon, acetate rayon, Fiberglas, Nylon, Vinyon, casein fiber, and soy bean fiber. The chart on page 103 outlines the chemical and staining tests for identifying these fibers. Before proceeding with the tests, one must first ascertain by examination under the microscope, or by other methods, that the sample is not composed of cotton, wool, silk, asbestos, or other natural fibers.

Following is description of tests:

Ignite sample: Apply flame to end of single fiber. Failure of fiber to burn indicates it is Fiberglas. If fiber burns and bead forms, it may be acetate rayon (acetic acid odor); casein fiber or soy bean fiber (burnt hair odor); Nylon (amide odor, round hard bead); or Vinyon (paraffin wax odor, fiber shrinks from flame). If fiber burns but no bead forms, it may be viscose rayon or cuprammonium rayon.

Acetone test: Agitate fresh sample of fibers vigorously for 15 minutes at room temperature in about 50 times its weight of acetone. If fibers dissolve, they may be acetate rayon or Vinyon. If fibers do not dissolve, they may be casein fiber, soy bean fiber, or Nylon. (See A. S. M. E. method for further details.)

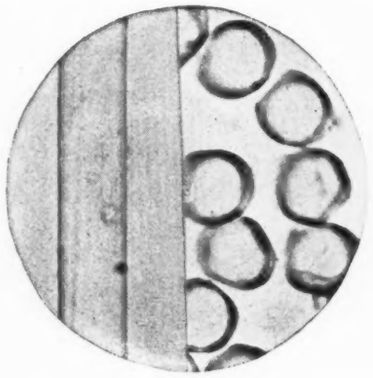
Phenol test: Agitate fresh sample of fibers for about 15 minutes at room temperature in about 50 times its weight of a 90% phenol solution. If fibers dissolve, it indicates they are acetate rayon. If fibers do not dissolve, it indicates they are Vinyon.

Hydrochloric acid test: Agitate fresh sample of fibers (or residue from acetone test) for 5 minutes at 30 to 40° C. in about 50 times its weight of concentrated hydrochloric acid. If fibers dissolve, it indicates they are Nylon. If fibers are stained orange but do not dissolve, they may be casein fibers or soy bean fibers.

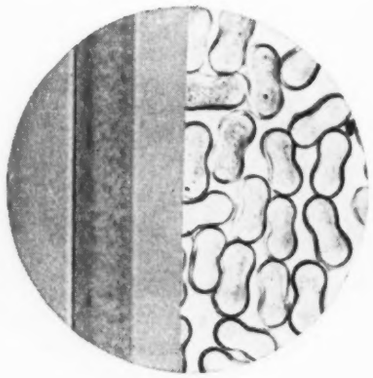
Morse test: Treat fresh sample of fibers until partially dissolved in 18% sodium hydroxide. To approximately 1 cc. of solution add 4 drops of iso-amyl alcohol and 15 drops of 30% hydrogen peroxide. Mix well and heat over a steam bath until foaming has subsided and most of the alcohol and water have evaporated. Add 2 cc. of 5N hydrochloric acid and reheat on steam bath for 10 to 15 minutes and observe color. Casein fibers turn rose red. Soy bean fibers remain colorless. (When partially dissolved, the fibers disintegrate into a cheese-like floc; a small piece of this floc may be used for the test; the solution tested be very highly concentrated with respect to the amount of fibrous material. The hydrogen peroxide should be kept on ice and used cold.)

Brilliant Blue 6BA: Treat fresh sample of fibers for 3 minutes at room temperature in a 0.2% aqueous solution of Brilliant Blue 6BA. Rinse for 5 minutes in warm water at 50 to 60° C. Viscose rayon remains practically colorless; cuprammonium is stained blue.

Supplementary Tests: The so-called universal indicators are useful for making preliminary or corroboratory tests. One of these, Colotex B, is distributed by Neuberg Chemical Corp., 441 Lexington Ave., New York.



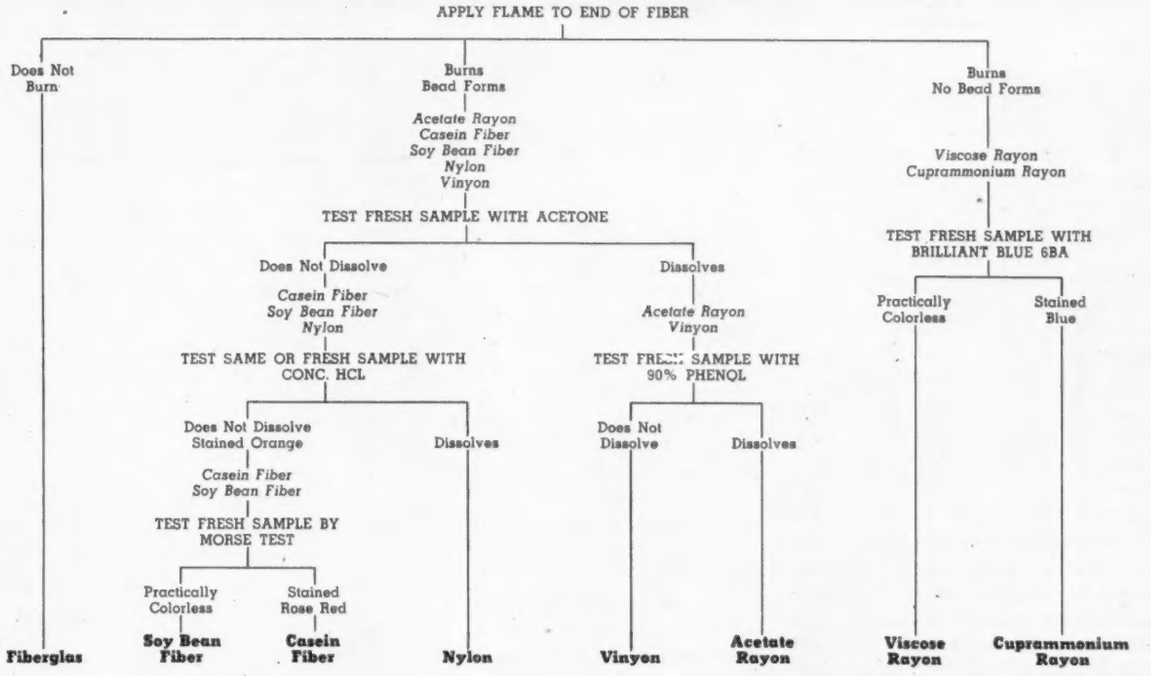
Nylon

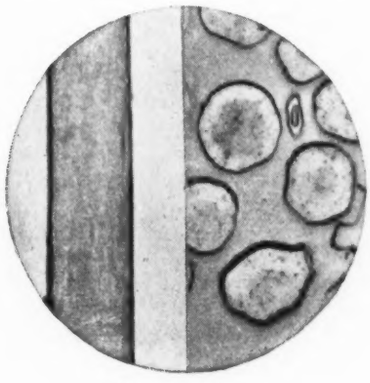


Vinyon

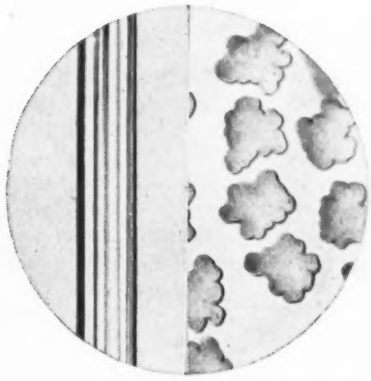
IDENTIFICATION OF SYNTHETIC FIBERS

Chart outlining fiber tests described in text



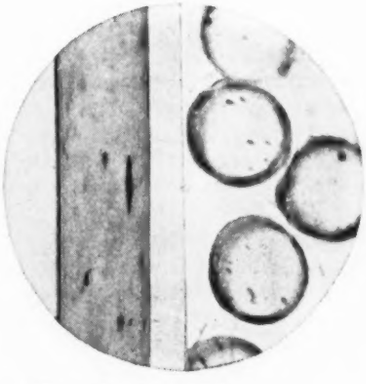


Casein fibers



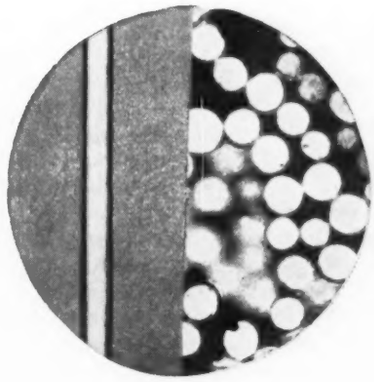
Viscose rayon

Acetate rayon



Soy bean fibers

Cuprammonium rayon



Fiberglas

War-Time Conservation

Of machinery and supplies calls for new lubrication practices; control of waste

By JOHN J. ENWRIGHT

IMPORTANT among the multitude of problems, some of them without precedent, which textile mill executives are facing today, is that of excessive wear and tear on the equipment. This is an era of rising costs, rising prices, and increasing scarcity of materials of construction. It is the consensus of those in Washington that the demands of the Government are, for the immediate future, going to be larger and larger. This will make the procurement of machinery and supplies more and more difficult. There is also wear and tear on the employees, especially those on the "grave yard shift." Because of these conditions, there is greater need than ever before for a closely supervised, well-planned program of lubrication; a constant drive to prevent breakage and spoilage; and a serious effort to secure the good will and sincere cooperation of the entire working staff.

Formerly, when mills ran an 8- or 10-hr. shift, lubrication was a comparatively minor problem. The machinery builders and the larger oil companies—sometimes cooperatively, and sometimes independently—had worked out complete and accurate lubricating schedules for practically every type of textile machine. There were schedules, for example, for opening and picking equipment, for all the card-room machinery, spinning and twisting machines, for looms, and for dyeing and finishing machinery. If these carefully prepared instructions were followed, there was, in general, no excessive wear due to faulty lubrication. If there was excessive wear, new parts were readily available at a reasonable cost. These lubrication schedules were based upon conditions which were normal at the time of preparation. In those days machinery, which was in operation only 8 or 10 hr. daily, had ample out-of-service time for the bearings to cool to atmospheric temperatures, and for the oil forced by the rotation of the shafting or revolving member from the pressure area to return to that area. Moreover, in the older machinery, clearances were greater, fits were looser, and—in some instances—speeds were lower.

At present with the longer hours—generally 16 at a stretch, and sometimes 24—there is no time for the bearings to cool, and for the oil film to return in full thickness to the pressure areas. The natural consequence is added wear. This wear, which is to be expected under the conditions now prevailing, is increased by higher speeds and frequently by lack of adequate cleaning and maintenance of the machines.

If these conditions are noticed by the management, especially in the case of new equipment, the machine maker may be blamed for shipping faulty materials, or for bad design or workmanship. Actually the fault is due to failure to recognize new conditions and to make the necessary preparations to meet them in an adequate manner.

Today, for example, a mill installing new roving or spinning equipment is probably working on war orders and is being pushed by some bureau or some customer for every pound of yarn or yard of cloth that it can get out. Therefore, as soon as the erector informs the superintendent that the machine is assembled and that he is ready for a few cones of sliver or bobbins of roving for a test run, the frame is likely to be taken from the erector and put into production without the benefit of a break-in run of short duration, which the erector has requested. This is wrong; and mills which follow this practice will eventually pay a big price in wear and repairs, and perhaps in early depreciation of this new equipment.

During the war, textile mill executives must take every possible step to conserve equipment and supplies. Alert to this fact, TEXTILE WORLD will in 1942 place great emphasis on all phases of mill maintenance. In this article, Mr. Landau discusses in broad terms the proper lubrication methods to insure long life to machinery, gives some valuable advice on preventing unnecessary breakage or waste of supplies, and outlines a procedure which will facilitate delivery of repair parts. Several articles on maintenance of specific types of equipment are now in preparation by experts in their respective fields and are scheduled for early publication

BREAK-IN RUN. The writer believes that today every machine installed in a mill should be run without stock for at least 12 hr. before being put into production. During this time, the erector must examine every bearing, at least one an hour, and during the inspection should apply oil copiously. This drenching with clean oil will wash out the minute, sharp-edged particles of abraded bearing material, which otherwise would grind out the bearing or wear the shaft, or do both simultaneously, thus ruining in a few hours the accuracy of the machinist and the fitter.

Today oiling should not be an operation left to an operative who is unfit for a more responsible job, as is the practice in some mills. Rather, this work, as the author sees it, should be entrusted to a conscientious middle-aged man who is familiar with the operation of the machinery entrusted to his care, who realizes the value of the equipment which he can ruin by inattention to his duties, and who is not in such a big hurry to make the "rest" that he scatters oil all over the place and misses half the oil holes. A good oiler can make a real contribution to the success of his department, as much—in these abnormal times—as a good fixer or frame hand.

REPAIR PARTS. Another factor which should make mills careful with their oiling and which should redouble their efforts to avoid undue wear and breakage is the increasing difficulty in obtaining immediate prompt shipment of either repair or spare parts. Although it is true that under order P53 repair parts have been given a priority rating of A10, this blanket order does not assure by any means that the part is in stock or that facilities are immediately available for its manufacture. And in addition, the machinery manufacturer may have hundreds of similar P53 orders for a particular part.

For this reason, a mill, when ordering parts, should be careful to give a full and complete description of what is required so that the manufacturer can immediately determine with exactness, and beyond question, just what to ship. In every instance, serial numbers, order numbers, and dates of shipment are helpful, as well as any pattern, drawing, or casting numbers which may appear on the required part. These complete data furnished in the first letter, or on the order, may save costly delays and expensive mistakes.

Again, mills should be fair and accurate in stating their wants. For example, a certain mill ordered 20 head end intermediate gears and marked the

(*Continued on page* 106)

Making Cotton Ducks

Practical information which will help mills to meet Government specifications

Although the Government specifications applying to cotton duck are valuable guides for textile manufacturers who are starting production of these fabrics, they do not contain all the essential information needed. Additional data on yarn sizes on gray goods construction appeared in our November, 1940, issue. Through the cooperation of one of the leading duck manufacturers in this country we are able in this article to present further information which will aid textile mills to meet Government requirements. Moreover, the executives of that company have volunteered to supply answers to any inquiries on manufacturing details needed by prospective bidders on contracts for duck. Such inquiries should be as specific as possible and should be addressed to Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York.

TO MEET a Government demand for cotton duck of various types which far exceeds the capacity of those mills which specialize in manufacture of duck in normal times, other mills must come to the rescue. Some mills that have had no previous experience whatever with these particular fabrics may be called upon to produce cotton ducks. Other mills which are not equipped to produce duck in the most economical manner may be able to serve to some extent in the emergency. Among those types of duck which have been ordered in large quantities are included numbered duck, Army duck, tent duck, and shelter-tent duck.

Federal Specification CCC-D-771a and Amendment 1 outline the requirements for numbered duck, Army duck, and dyed Army and tent duck. The provisions set forth must be followed closely. A brief resumé of this specification follows:

Grade—Shall be known commercially as firsts.

Material—Thoroughly cleaned cotton, free from waste.

Workmanship—Evenly woven, without sizing, free from imperfections in manufacture affecting the appearance or serviceability.

Weave—Shall be plain.

Width—As specified with tolerances varying from ¼ in. plus or minus in the narrower width to ¾ in. plus or ⅜ in. minus in widths from 81 to 120 in.

Weights—As nearly standard as practical, no piece acceptable which weighs less than the specified minimum.

Thread count and ply—May exceed that given in the table accompanying the specification but shall in no case be less.

Breaking strength—Average shall not be less than given in tables.

The length of bolts or rolls; the finish; the method of sampling; testing; packaging; packing; and marking are all set forth in this specification. Specification CCC-T-191a, describes in detail the methods of testing.

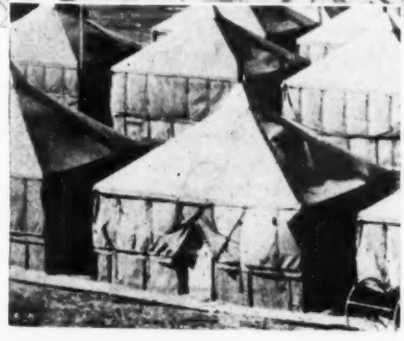


Photo by U. S. Army Signal Corps

Manufacture of pyramidal tents; huge amounts of duck for this purpose are purchased by Jeffersonville Quartermaster Depot, insert at left shows a few of the completed tents

NO. 6 NUMBERED DUCK is an important item in recent government purchases. This material, according to Federal specification CCC-D-771a, has a standard weight of 13 oz. per linear yd. (22 in. width); a minimum sq. yd. weight of 20.74 oz.; the selvage stripe must be 1¼ in. from the edge; warp and filling not less than 3 ply; minimum thread count 32 and 24 for warp and filling respectively; and the breaking strength (grab method) 335 lb. for warp and 250 lb. for filling.

Supplementary information not included in the specification follows: First, 15/16 in. middling cotton provides a satisfactory yarn of ample strength. It is possible that ⅞ in. staple carefully manufactured might answer. Three-ply, 6.25s yarn for warp and filling is frequently used. The single yarn is given a Z twist and plied; the plied yarn is given a S twist. Yarn sizes may vary from 6.25 to 7. Instead of using 6.25/3 a finer yarn with a heavier ply (for example, 8/4) or a finer yarn with a fabric thread count higher than 33x23 can be used to produce a satisfactory finished fabric. With 6.25/3 yarn, a thread count of 33x23 is proving successful. Twist factors for various plied yarns are deter-

mined from the table which follows:

	Warp	Filling
2 or 3 ply	5	3.5
4 ply	4.5	3
5 or 6 ply	4	2.5
7 ply and up	3.5	2

These factors may be varied if better results can be secured, as the amount of twist is not specified.

If yarn is purchased, it is highly desirable to specify large packages with a minimum of knots. It may be even more advantageous to purchase twisted yarn on warp beams.

Reeding—A heavy reed suitable for duck manufacturing is required on the looms. All the leading reed manufacturers are familiar with these requirements and can furnish suitable equipment. The work should be reeded 3 ends to the dent.

Beaming—Heavy ducks are generally beamed from a direct creel beamer. A good, firm warp is essential for satisfactory weaving. A section beamer might be used, the work being handled, just as if it were on the way to the slasher. From this warper beam, the ends are transferred by means of the section beamer to the loom beam. Since no sizing is used, the slasher has no part in the manufacture of this item; however it is possible to use the slasher as a beamer by running it without size and without heat.

Length of Cuts—Since lengths specified are to be closely followed it is important that the yarn beam and yarn package contain sufficient length so that the work can be run without undue waste.

Although a regular duck loom, such as the C & K D-1 or D-2 loom, is well suited for weaving this type of duck, other looms can be employed; for instance, the XU model Draper loom. Prospective bidders should study the Government specifications carefully to determine which particular type of duck he can produce to best advantage.

When ducks are to be bleached, dyed, or finished, it is important for the manufacturer to produce fabrics which will conform to the finished widths, weights, counts, etc., specified.

SHELTER-TENT DUCK. A typical construction for shelter-tent duck, as given in Federal Specification CCC-D-771a, is 33 in. wide; 7.9 oz.; 62x54, 2-ply warp and filling. Since this is the finished-goods specification, the manufacturer must take proper precautions to produce a gray fabric that will finish well within the allowable limits.

A suitable gray construction is 35¼ in. wide; 20s 2-ply warp and filling; 60x60, 8.8 oz. goods. The single yarn has a Z twist with factor of 4.75 and the plied yarn the opposite twist with factor of 5. This fabric is reeded 3 ends to the dent.

Extreme care is necessary to produce a fabric with high water repellency. This quality depends on the manufacturing details, as well as—to a certain extent—on the finishing. The loom setting is important. Pin holes must be kept closed up as far as possible. A high back setting will introduce additional crimp, and is of some value. As previously mentioned, yarn on large packages, practically knotless, should be used.

Modified D-model Draper looms are particularly suitable for weaving this particular fabric. However, it can be produced on other types of looms; for example, if X-model looms are provided with heavy lay and double drag rolls, they will also weave satisfactory goods. E Model looms equipped with drag rolls can be used.

Defects—Certain conditions that might cause defects in finished goods should be carefully guarded against. These include knots, jerk-ins, broken ends, thin places, and drops of oil or water which will affect the dyeing or finishing.

Finishing—Government goods are piece dyed. Either mineral, vat, or sulphur colors are being used. All shelter-tent duck is now being dyed with mineral colors. In these goods, water repellency is very important. If the goods are poorly made, no amount of finishing will enable them to withstand a heavy hydrostatic head. It is well for the finisher to test a sample of the gray goods before finishing, to see if it will meet the specifications in this respect.

In the finishing of numbered ducks, the treatment and class of dyes required depend on the ultimate use to which the goods are destined, as well as on the department purchasing. For example, the Ordance Department material for gas-mask covers requires a definite percentage of paraffin wax finish. Therefore, it would be well in every instance for the gray goods manufacturer, before proceeding too far with the manufacture of any questionable item, to consult with a finisher who is familiar with the requirements of the various Government departments and services.

In some instances it is wise to make up a sample and have it finished before going ahead with an order. This permits errors to be corrected before it is too late.

War-Time Conservation

(*Continued from page* 104)

order "URGENT—RUSH BY EXPRESS." Of this particular gear, the machinery manufacturer had a stock of 5. To make 20 would take at least two weeks, since work would have to start in the foundry. The question then came up as to the advisability of depleting the entire stock on hand by shipping 5 and back-ordering 15, or of waiting until the entire 20 gears could be made, or to find out why the mill was building up such a large order for a gear which ordinarily would not need replacement once in 10 years of normal use.

A long-distance telephone call to the mill quickly settled the point. It seemed that a minor emergency was created in this mill by a hot bearing and a careless stock-room clerk. Somebody was called on the carpet and received a reprimand; to avoid a repetition of this, 20 gears were ordered.

The machinery manufacturer shipped 2 gears by express, and booked 10 for future shipment "when ready." Thus he was in position to serve another customer in a similar emergency, should it arise. Incidentally, this procedure prevented the mill from tying up about $50 in slow-moving stockroom items.

CONSERVING SUPPLIES. Because of the growing difficulty of obtaining supplies, mill executives should impress on the employees the fact that they must increase their efforts to reduce the breakage of bobbins and shuttles, of electric lamps and brooms, and of all those thousand-and-one items used in the daily work around the plant. Already the problem of securing such materials as cork and synthetic rubber roll covering is acute; motors, without a priority certificate, are unobtainable; paper and Cellophane are getting scarce; and no one can forecast how long the supplies of chemicals and sizing materials are going to be available without rationing. On the present basis of comparative value, a mill must make about 3½ yd. of sheeting to pay for a quill, and a loom must work almost 300 hr. to pay for a loom motor.

Today, therefore, more than ever, it is a necessary function of management to see that the work runs well, that the routine details of daily lubrication and maintenance are performed under adequate supervision, that there is no unnecessary hoarding, and that waste of every kind is firmly under control and held to the irreducible minimum.

TEXTILE EQUIPMENT NEWS

Electrical Developments in 1941

Among the notable developments of 1941 in electrical equipment for textile mills described by A. P. Mansfield, in a year-end review issued by General Electric Co., Schenectady, N. Y., are a constant-tension drive on Duo Dyeing machines, a new control for filling straightening; a new range-speed control valve for turbine-electric range drives; a new, compact electronic motor control; and a new electric tachometer for indicating a wide range of operating speeds in textile finishing; and a new rayon motor for large packages.

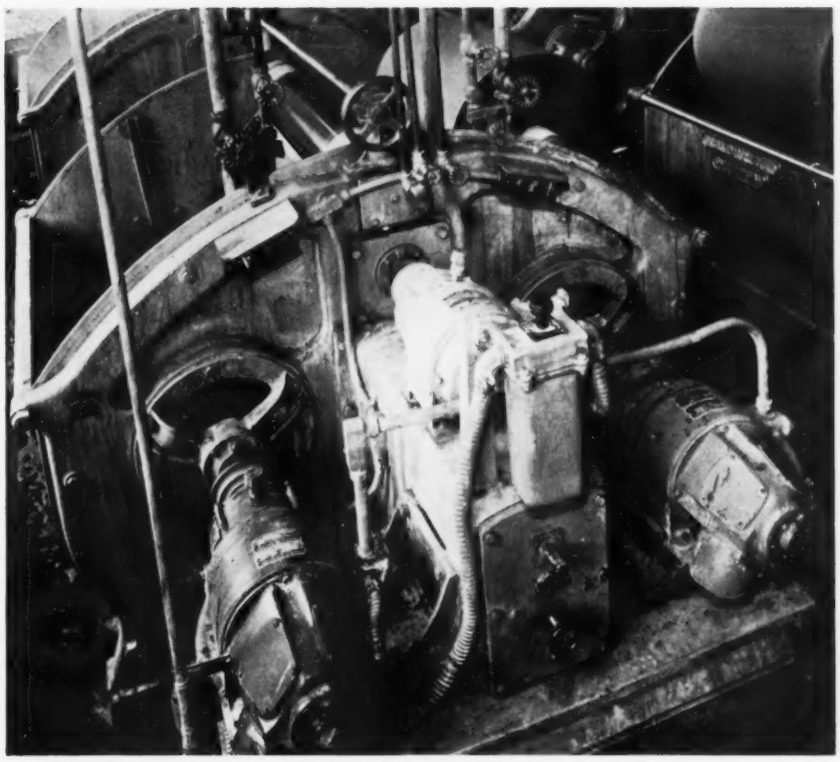
Part of the installation of six constant-speed, constant-tension, electric drives on Duo Dyeing machines at Hartsville (S. C.) Print & Dye Works is shown in the accompanying illustration. They have been operating more than 100 hr. per week since January, 1941, largely in finishing military fabrics.

To permit straightening of such fabrics as shirtings and dress goods, which are dried in the tenter, a new weft straightener of the "canting roll" type was developed by the Winsor & Jeraul Mfg. Co. For use with this straightener, the G-E weft straightening control has been modified slightly and scanning mechanisms have been installed at the entering end of the tenter.

A new torque-motor-actuated, oil-relay-operated, range-speed control valve has been developed for controlling the speed of turbine-electric range drives. The turbine speed is dictated at all times by the voltage output of a small pilot-generator direct coupled to the main drive. Speed adjustments are made with a small rheostat, and a push-button station provides for the usual steps in range operation. This speed-regulating valve is located in the steam-supply line to the turbine, and operates independently of the usual speed governor, which becomes operative at maximum turbine speed.

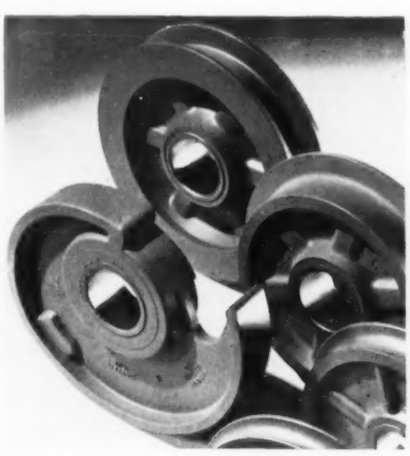
More satisfactory adjustable-voltage control of d-c motors, both for individual units and for groups of motors operating in tandem, on cloth-finishing ranges, has been accomplished by providing in one equipment the means for starting, stopping, controlled acceleration, and stepless speed regulation of the motors. Complete motor protection is also included. This system is called Thy-mo-trol.

A new electric tachometer, which is suitable for indicating the wide range of operating speeds of textile finishing machines consists of a small generator of the permanent magnet type, direct coupled to the machine the speed of which is to be indicated, and an indicating instrument which can be located either nearby or remotely.



Duo-Dyeing machine at Hartsville Print & Dye Works equipped with G.E. constant tension drive

For driving very large buckets in the spinning of heavy denier rayon, a new motor, known as the Rayno motor, has been introduced.



Plastic loom cam (National Plastics)

New Cam for Looms

A new loom cam, made of a recently developed plastic material and having an oil impregnated bearing, has been developed by National Plastics, Inc., Knoxville, Tenn. As used on cam looms, the new product is reported to have a number of advantages. Usual oiling is said to be eliminated, as also is dripping of oil on cloth. Dusting from friction and wear is prevented, the manufacturers state, the cams do not wobble, and oval wear is retarded. The plastic cam is cited as lengthening life of harnesses, and is said not to be affected by oil or moisture.

Dabbing Brush for Noble Combs

The Fuller-Gript principle of brush construction developed by the Industrial Division of Fuller Brush Co., Hartford, Conn., has now been successfully applied by that division to dabbing brushes for Noble worsted combs. The density of bristle is said to be increased several times by the Fuller-Gript principle, a fact which accords a corre-

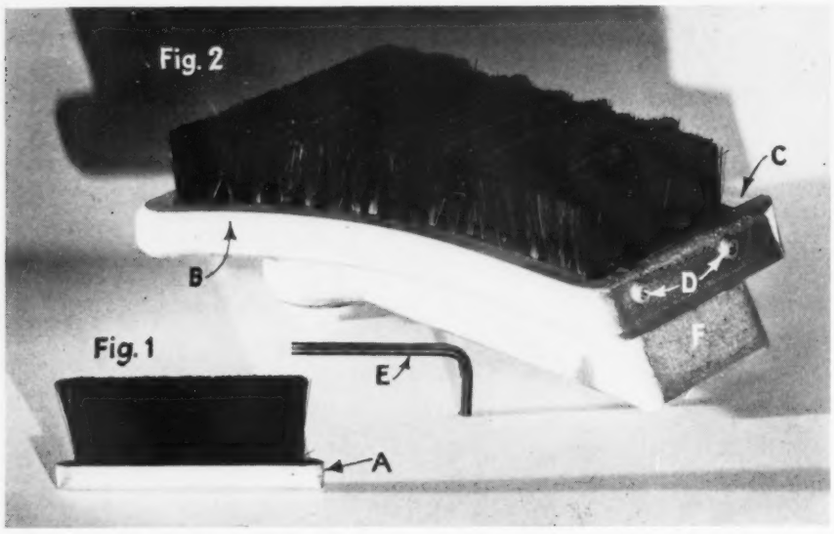


Fig. 1. Bristle strip for dabbing brush. Fig. 2. Brush fully assembled (Fuller Brush)

sponding increase in the life of the brush and also insures a straighter, more thorough combing, since the greater density allows less slipping up of the fiber between bristles. The life of the brush can be further increased by turning some of the bristle strips around when they show wear at the circle-tangent point, and, of course, all bristle strips seldom require replacement at one time, a fact which further increases the economy of the brush. Use of metal for all rigid parts prevents damage from oil soaking, warping, and splitting.

A row of bristles held in a rigid steel strip or backing is the basis of the Fuller-Gript principle. A bristle strip is shown in Fig. 1; and the assembled brush, in Fig. 2. The strips vary from a length of $5\frac{3}{8}$ in. at the wide end of the brush to $3\frac{13}{32}$ in. at the narrow end. They are inserted by first slipping one end of the metal base of each strip *A* (Fig. 1) under the edge of the base plate *B* (Fig. 2) and then screwing the holding bar *C* into place over the opposite ends. All strips are then pushed tightly together by means of the end screws *D* and special wrench *E*.

The top plate *F* is bolted to the dabber foot. One of the advantages stressed for the brush is that this plate can be left on the dabber foot while the base or bristle plate is removed for the replacement of strips. This avoids disturbance of the brush setting and permits renewal of bristles by inexperienced help at any time on any mill shift. The manufacturer urges mills to keep extra bristle plates on hand filled with bristles so that they may be immediately slipped into place to permit prompt resumption of comb operation while the removed bristle plate is refilled at leisure.

The tangent point of the two comb circles comes at the narrow or heel end of any dabbing brush, and the most rapid wear on the bristles is always caused by the tearing action at this place. Since it is the custom of most combers to so set their brushes that the tangent point comes somewhat to the inner side of the brush center, it is possible, with this new Fuller-Gript brush, to remove the first two to four bristle strips when wear appears and turn them around to present relatively new bristle to the pins. Replacement of the short strips at the heel end may occur up to 50 times before the long strips at the opposite end require replacement; and, when this occurs, the long removed strips can be cut down to lengths suitable for the heel end, a step which presents unused bristles at the tangent point and further increases the economy of the brush. The standard length of the brush as produced by Fuller is sufficient to satisfy the most exacting needs of the comber; and, if a shorter brush is desired, wood blanks can be substituted for any number of the longer strips.

Vinyon Fabric for Use in Screen Printing

Development of a new Vinyon fabric for use in screen printing has been announced by Bequie-Weil, Inc., 171 Madison Ave., New York. It was the belief of both the mill and the yarn producer that Vinyon had the characteristics which made it peculiarly adaptable for the purpose. For this reason, this development has planned prior to the ban on use of silk for civilian purposes.

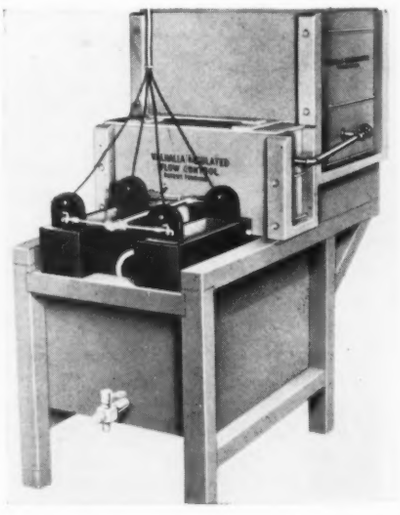
Properties of the fabric cited by Bequie-Weil are the following: (1) fabric maintains its firm, drum-like tension on the frame wet or dry and does not sag in use; (2) it is not affected or weakened by concentrated caustic solutions, which makes it particularly desirable for discharge printing; (3) it doesn't absorb any of the dyes during printing and it is easily washed; (4) after washing, the screen can be wiped dry; (5) the fabric is not affected in any way if the screen is put away while wet; (6) the fabric will not deteriorate when the screen is stored for a long time.

It has been found that the printing materials which are normally used with silk can be used with Vinyon, with the exception of acetone or aromatic hydrocarbons. Dextrin, caustic-resistant paints, soap, glycerine, sentitized gelatins for photographic screens, etc., work well on this material. The surface is very smooth for painting. Instead of the fast-drying adhesives which contain acetone, now in use for mending, it will be necessary to use other adhesives which are available and equally satisfactory.

This material must not be subjected to temperatures exceeding 150° F. due to the thermoplastic quality of the Vinyon. It is not necessary to put the screens in a steam-box or to use very hot water for washing. Normal care gives satisfactory results. At present the fabric is being supplied in 50-in. width.

Chlorinator Produces Sodium Hypochlorite

A machine which permits textile mills to make their own supplies of chlorine bleach has been announced by the Valhalla Co., 231 So. La Salle St., Chicago. This device, known as the Valhalla



Device for producing sodium hypochlorite (Valhalla)

chlorinator, produces sodium hypochlorite by passing direct current through a common salt solution. It has been in use for many years in other industries, and has now been introduced to the textile industry because of the chlorine shortage.

The operation of the chlorinator is said to be simple. A tank at the top is filled with brine; current is set up in the special cells as the brine flows into them; and the sodium hypochlorite bleach solution, in proper concentration for immediate use, accumulates in a lower vat, from which it is drawn off as desired.

Illumination Levels for Textile Mills

The illumination tables listed below for textile mills are the result of recent findings and observations by the Westinghouse Lamp Division, Bloomfield, N. J. They are based on the scientific fact that existing foot-candle levels should be at least doubled if measurable and significant improvements in seeing are to result. In addition, the new recommendations give full weight to the improvements in old light sources, the high efficiencies of the new, and the ever downward trend of lighting costs as a result of all these improvements. The values shown should be provided on the work or other area regardless of whether in a horizontal, vertical or oblique plane.

Operation	Foot Candles
Cotton Mills:	
Opening, Mixing, Picking, Carding and Drawing	10
Slubbing, Roving, Spinning, Spooling	20
Grading	100
Warping on Comb	30
Beaming and Slashing on Comb—	
Gray Goods	20
Demins	100
Inspection—	
Gray Goods (Hand Turning)	50
Denims (Rapidly Moving)	200
Automatic Tying-In, Weaving	50
Drawing-In by Hand	100
Silk and Rayon Mills:	
Soaking, Fugitive Tinting, and Conditioning or Setting of Twist	10
Winding, Twisting, Rewinding, and Coning, Quilling, Slashing	30
Warping (Silk or Cotton System)—	
On Creel, on Running Ends, on Reel, on Beam, on Warp at Beaming	50
Drawing-In—	
On Heddles and on Reel	100
Weaving:	
On Heddles and Reeds	10
On Warp Back of Harness	20
On Woven Cloth	30
Woolen and Worsted Mills:	
Carding, Picking, Washing, Combing, Twisting, Dyeing	10
Drawing-In, Warping—	
Light Goods	20
Medium Goods	50
Dark Goods	100
Knitting Mills:	
Knitting Machines	20

Three-tier feeding scray (Hermas)

Three-Tier Feeding Scray

A three-tier feeding scray holding three times as much cloth as a single scray of the same length has been announced by Hermas Machine Co., Hawthorne, N. J. Development of the new scray followed the introduction some time ago by Hermas of a high-speed shear (TEXTILE WORLD, June, 1941). With the high-speed shear, a single scray is emptied quickly, making it necessary to stop the shear until more goods are prepared in the scray. By using the three-tier scray, in conjunction with the Hermas automatic-return sewing machine unit, stopping of the shear is obviated and cloth-room operations are speeded up.

The automatic-return sewing machine is attached to the lower tier of the scray. In operation, the first piece is brought from the sewing unit to the top of the scray and fed through power-driven rollers into the top tier, from which it moves down without tension, into the lower tiers by gravity, to pile up, first in the lower tier from which it is fed to the shear, then in the middle tier and, when that is full, in the top tier. A new piece is sewed on to the first piece in the usual way, keeping the scray constantly full. When all three tiers are full, a sufficiently long run is assured to allow the operator to check up on the operation of the shear. It takes three times as long for the shear to catch up with the sewing operation, which has, in turn, been speeded up to keep pace with the shear. Shearing may be made practically continuous.

Black-Out Coating

For blacking-out industrial plant windows and skylights, a new coating, known as Black-Out-Black, has been introduced by Carbozite Corp., Pittsburgh, Pa. The material is said to meet all recommended practices and to be easily removed when danger no longer exists. The coating is not a paint, but is a smooth-flowing liquid coating, manufactured from a pyrobitumen ore, especially refined and mixed with quick

drying, volatile solvents and other ingredients to provide complete opacity and gloss-free surface. It can be sprayed or brushed on quickly. Only one coat is required to assure complete protection against light penetration.

Camouflage Paints

Camouflage paints for concealing strategic military and civilian objectives by making them blend in with the colors of the surrounding earth and foliage to prevent spotting by aerial cameras and bombers have been announced by Sherwin-Williams Co., Cleveland, Ohio. The paints are made in such colors as field drab, earth brown, and dark green. They are designed for spreading over roofs, buildings, streets, and other structures which disclose the presence of a bombing objective or which serve as landmarks from the air. They dry without gloss or reflections and permit streets to be "painted out" or non-existent streets to be "painted in," and make conspicuous objects merge into the natural background.

Useful Accessories for Textile Mills

The largest and most powerful mercury lamp in the world has been announced by General Electric Lamp Dept., Nela Park, Cleveland. Designated as the 3000-watt G-E Mazda "AH-9" mercury lamp and rated at 120,000 lumens, the lamp is 55 inches in length, and measures slightly more than 1 in. in diameter. Development engineers believe the "AH-9" mercury lamp will be a boon for the lighting of large areas where lofty mounting heights of luminaires are required. Trial installations have proved that these lamps in good reflectors and on conventional spacing centers, can provide more than 50 footcandles of light evenly over the working plane.

New rubber and metal devices, known as Vibro-Insulators, developed to decrease vibration and noise in machinery were recently announced by B. F. Goodrich Co., Akron, Ohio. Three types are available, to cover the requirements of various load types and limits.

High-pressure condensate return system with eductor principle of operation said to insure thorough condensate and air removal from process apparatus, and to make increased production possible by maintenance of uniformly high temperatures, has been announced by Cochrane Corp., 17th & Allegheny Ave., Philadelphia. After expulsion of air from the closed circuit, condensate is returned to boiler at temperature close to that of process pressure without flash loss and with remarkable fuel savings, it is stated.

Wired and unwired fluorescent units available in unit lnegths for any specified size and number of fluorescent lamps, have been announced by Wiremold Co., Hartford, Conn. Wired units are supplied as standard with white plastic lamp holders, with channel and covers aluminum finish. New controls, designed to fit within the channel make a completely self-contained installation. Available fittings include hangers for ceiling, wall or special applications.

Surface troffers which are said to make it possible economically to increase lighting capacities at any time without disturbing the original installation, have been announced by Edwin F. Guth Co., St. Louis, Mo. The base type, supplied with ornate cast ends, and the continuous extension type furnished with a cast joiner, provide simple inexpensive lighting expansions and can be had in sizes for two or three 40-watt fluorescent lamps mounted as individual units or in continuous arrangements.

A standardized motor control center that is said to be not only adaptable to any combination of motors but also to be quickly changeable to suit any new sizes of motor required by production alterations has been announced by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. A unit is made up of standard section 20 in. wide by 90 in. high and 20 in. deep, and 2 to 5 individual control elements can be stacked in a single section; wiring is brought in from either top or bottom and runs in duct behind units.

New Dyes and Chemicals

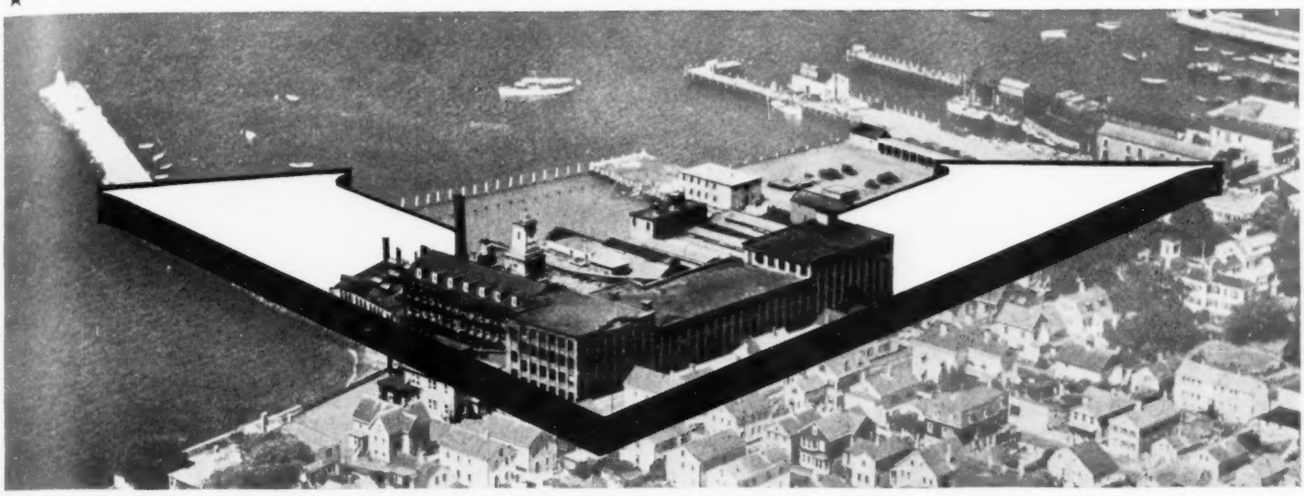
Size for Rayon Hosiery Yarns

Development of a new chemical size for use on rayon yarns that are to be knit into hosiery has been announced by American Viscose Corp., 350 Fifth Ave., New York. The new size, known as Avconit No. 1 is designed to hold the twist of rayon yarns during their manufacture into hosiery, and is said to be as effective on low-twist as on high-twist yarns. It is quite possible, for example, to hold 75-den. 40-turn yarn when this size is used. In addition, Avconit No. 1 affords lubrication to the yarn for knitting and protects the fabrics, reducing damage to them due to snags and the like in knitting.

According to American Viscose, commercial-scale tests have shown that yarn treated with the new size forms a clear stitch on the knitting machine. Among other things, this means that

TO DETERMINE AUTOMATICALLY the weight per yard of fabrics, the total weight of the piece, and the number of yards per pound, Sherman Mfg. Co. has recently installed the Toledo (Ohio) Scale Co. yardage scale shown in the accompanying illustration. A bolt or piece of material is placed on the platform after the number of yards has been determined by lineal measurement. The weight per yard is indicated on the center chart of the dial and the number of yards per pound is indicated on the outer chart, simultaneously. Scale also indicates total weight.

ATWOOD'S POSITION
In the VICTORY PROGRAM



Plant of The Atwood Machine Company at Stonington, Connecticut

To the users of Atwood Machines **and the fine yarns produced on Atwood Machines this statement of policy is made with full confidence that it will be accepted in the spirit with which it is presented.**

1 Atwood resources — men, machinery and experience — will be employed without stint for the production of weapons and parts essential for victory, thus carrying on and expanding defense production commenced **eighteen months back.**

2 Atwood replacement and repair services will be maintained to the utmost limit of our ability, in order that your Atwood machinery may continue to function with maximum effectiveness however long and hard it may be used.

3 With your cooperation in obtaining the necessary priorities, Atwood Machinery essential for your production needs will continue to be furnished. It is our firm intention to be of maximum assistance to you throughout as well as after the emergency period.

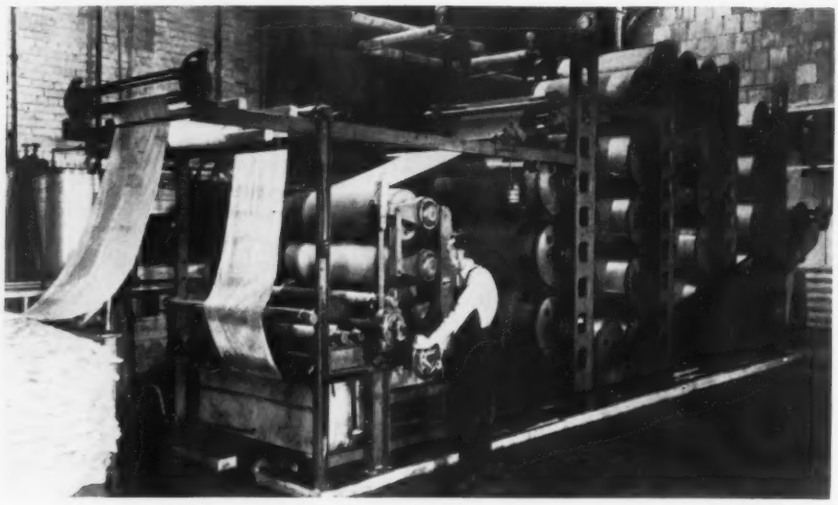
4 Atwood engineers will never stop concentrating on their fundamental objective, both past and future, — constant improvement of Atwood machines. Every possible production and service assistance will be rendered to those who have made The Atwood Machine Company the leader in its field for nearly 100 years.

Your continued cooperation and support are deeply appreciated by every member of

THE ATWOOD MACHINE COMPANY

STONINGTON CONN., U. S. A.

SALES OFFICES: STONINGTON • CHARLOTTE • LOS ANGELES • MANCHESTER, ENGLAND • BUENOS AIRES SAO PAULO • MEXICO CITY • MELBOURNE • SYDNEY • BOMBAY • MADRAS



NEW FINISHING RANGE installed by Reliance Dyeing & Finishing Co., Covington, Ky. The range, which was designed and built by H. W. Butterworth & Sons Co., Philadelphia, consists of a 39-cylinder vertical drying machine, three-roll padding machines, and folder

the possibility of mismatching between leg and foot, when stockings are knit on legger and footer machines, is reduced. Another advantage cited for the new size is that it is not abrasive or corrosive to knitting-machine parts. Furthermore, it is speedily and economically applied, and is easy to remove during scouring.

In marketing Avconit No. 1, American Viscose Corp. will issue licenses to throwsters to use the size on a royalty-free and fee-free basis, and will then provide technical assistance to the licensees and will instruct them in the handling and application of the new product.

Pigment Printing Colors

Extension of its line of Sherdye pigment printing colors has been announced recently by the Pigment, Chemical & Color Division of Sherwin-Williams Co., 292 Madison Ave., New York. The present line consists of 23 individual colors, covering a wide range of shades. These colors can be combined with one another to obtain practically any shade required. Sherdye colors consist essentially of an organic pigment mixed with a synthetic resin. They are applied in the usual manner on ordinary printing machines, but require no aftertreating or ageing to develop the shade, the synthetic resin forming an insoluble, flexible bond between the pigment and the fabric.

Originally employed for direct prints, the Sherdye colors, are now being used also in discharge printing. Although they have been offered thus far only for printing on cotton fabrics, it is expected that they will soon be made available for printing on rayon piece goods. In addition to their ease of application, another advantage cited for the Sherdye colors is their high degree of fastness to light.

Synthetic Sizing and Finishing Agent

A new type of synthetic sizing and finishing agent for textile yarns and fabrics has been announced by Rohm & Haas Co., 222 West Washington Sq., Philadelphia. Called Rhotex Size, the new product is a water-soluble resin, described chemically as the sodium salt of polymerized acrylic acid. It is supplied as a concentrated paste, which is easile dilutable.

Designed for the replacement of natural gums in sizing cotton and spun rayon warps, Rhotex size is used in conjunction with starch. It is said to produce a tough and flexible size and to reduce shedding, thus resulting in more efficient weaving and better binding.

Rhotex size can be used also in finishing operations. When used with starch, it is said to produce a more durable finish and to bind the starch more closely to the fabric.

Synthetic Resins: Finishing Agent

Three new compounds introduced during 1941 are described in a year-end review issued by American Cyanamid Co., 30 Rockefeller Plaza, New York. The first, Aerotex 140, is a viscous synthetic resin emulsion for use in the backfilling and weighting of the lower-count cotton fabrics. It is stated that Aerotex 140, in combination with starches, destrine, or gums, produces satisfactory results in the backsizing of carpets.

The second product, Aerotex 301, is an emulsion of a blend of synthetic resins used principally in the finishing of spun rayon and spun rayon mixed fabrics. It can be applied by any of the usual methods used in the finishing of spun rayons; e.g., pad mangle and batch, quetch and batch, pad mangle and dry, quetch and dry, etc.

The third product, Permel A, is a new textile finish effective in controlling shrinkage in fabrics. Permel A is said to impart an improved hand to fabrics and to minimize shrinkage of wool and cotton goods in processing or laundering.

New Publications

How to Fix Cotton Looms

COTTON LOOMFIXERS' MANUAL, by Ivar Moberg; McGraw-Hill Book Co., 330 West 42nd St., New York; $2.50.

A review of this book appears on page 128 of this issue.

"A New Survey of Universal Knowledge"

ENCYCLOPAEDIA BRITANNICA, Latest Revised Edition; Chicago, Ill.; Toronto, Can.; London, Eng.

As America joins, formally, the war of the democracies against the destroyers of freedom, it is dramatically appropriate that the new revised edition of this greatest reference work of all, the Encyclopaedia Britannica, should be "dedicated by permission to the two heads of the English-speaking peoples, Franklin D. Roosevelt, President of the United States of America, and His Majesty George the Sixth, King of Great Britain and Ireland, and of the British Dominions beyond the Seas, Emperor of India."

To quote Walter Yust, editor: "In 1768, the Encyclopaedia Britannica consisted of three moderately sized volumes. Today the Britannica is made up of three great units: the annual printing of the 24 volumes themselves; the annually issued Book of the Year; and the Library Research Bureau."

This reference-work has come to reflect more and more the developments in the United States, as well as in Great Britain and the world at large.

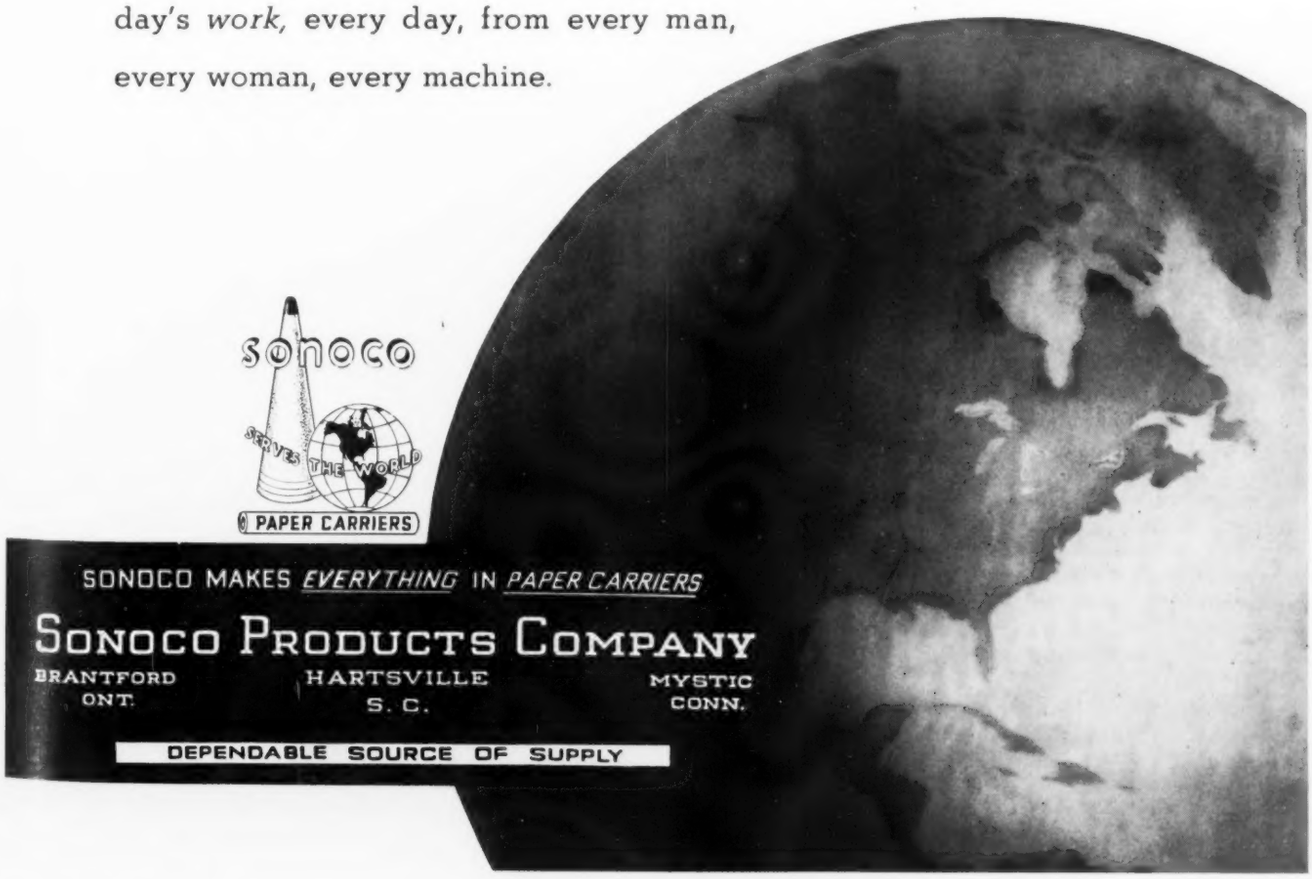
For example, the section on "Cotton

WE ARE ALL IN IT NOW!

By making this a war of machines the Dictators have played right into our hands.

But—this business of *all-out* production reaches far beyond the factories making planes or guns or tanks or other war materials. . . It begins with every man and woman in the country. From the farms, the offices, the shops, the railroads, the trucks, the mines, the forests, the rivers—these and many more are the backbone of America—the source of American effort—the core of American production.

Our supreme obligation is an honest day's *work,* every day, from every man, every woman, every machine.



and the Cotton Industry" in the latest edition was prepared under the direction of Douglas G. Woolf, editor of TEXTILE WORLD, and includes contributions by Alston H. Garside, economist, New York Cotton Exchange; Frank Nasmith, of the Universal Winding Co., Manchester, England; Winn W. Chase, associate editor, TEXTILE WORLD; Mildred G. Barnwell, executive secretary, Southern Combed Yarn Spinners Association; Paul B. Halstead, secretary, Cotton-Textile Institute, Inc.; John Hoye, fabric technician; William G. Ashmore, southern editor, TEXTILE WORLD; S. J. Kennedy, of Pacific Mills; and W. E. Morton, professor of textile technology in the University of Manchester, England.

The section on Synthetic Fibers, also prepared under the supervision of Douglas G. Woolf, was written by Stanley B. Hunt, president of the Textile Economics Bureau.

Under present world conditions, we know of no better investment for the average American family than a set of the Encyclopaedia Britannica. It keeps knowledge alive, and its Book of the Year, each year, keeps knowledge up-to-date.

Keeping knowledge alive and up-to-date is going to be a job second only, in the years ahead, to the job of winning the war.

Research: A Vast Force

LIVES AND DOLLARS: A Story of Today's Research, by I. D. Ratcliffe; Dodd, Mead & Co., New York, $3.00.

If anyone needs to be converted on the subject of research, he should read "Lives and Dollars," written by J. D. Ratcliff.

Out of the pages of this book pours a veritable stream of ideas and inventions, touching on so many of the elemental needs of man that the reader gets the impression of a vast force working constantly with astonishing ingenuity to solve the great problems of health, food, wealth, and living.

When these solutions are produced, we are inclined to accept them almost as phlegmatically as we endured the afflictions before-hand, little realizing that behind each of these colorless serums, these versatile plastics, these insect parasites, etc., lies a story of quest and discovery as thrilling as, and usually far more significant than, the voyage of a Magellan. It is these human stories of the latest developments in science that Mr. Ratcliff tells in this book.

The first part is devoted to those discoveries which save lives by the prevention or cure of disease. The second part deals with discoveries and inventions in the industrial fields—the dollar-saving discoveries.

All of this book by J. D. Ratcliff is fascinating, but naturally it will be the second part which will be of primary interest to the readers of this publication.

Spinning-Frame Operation

WHITIN SPINNING FRAMES—Technical Information on Adjustment and Operation; Whitin Machine Works, Whitinsville, Mass.; for limited free distribution.

This booklet (of nearly 100 pages) contains a wealth of operating data, formulas, and other useful information on cotton spinning. It is a valuable reference work and should aid mill men in obtaining economical and efficient performance from their spinning frames.

Unique Treatise on Cotton Manufacturing

COTTON MANUFACTURING: H. F. Mills and W. King; Dominion Textile Co., Ltd., Montreal, Canada; $4.50.

This book is unique in that it was prepared as text book for a four-year course on cotton manufacturing sponsored by Dominion Textile Co. for its employees. Written by staff members of Dominion and a representative from one of the leading textile engineering firms in Canada, the text has been fully edited by H. F. Mills, general superintendent Dominion Textile Co., and W. King, managing editor, *Canadian Textile Journal*. It presents—in concise, authoritative, and practical manner—essential data on opening, picking, carding, combing, drawing, roving, spinning, winding, spooling, warping, slashing, weaving, cloth-room machinery, analysis of fabrics, designing and economics of the Canadian textile industry. A minor drawback to the book from the viewpoint of readers in the United States is that in a few instances English types of equipment, rather than types made in this country, are discussed.

Analysis of Wage-Hour Law

THE FEDERAL WAGE AND HOUR LAW, Questions and Answers, by Arthur W. Nevins; National Foremen's Institute, Deep River, Conn.; $1.50.

It is a difficult thing to live under such a far-reaching piece of legislation as the Wage-Hour Law unless one keeps familiarized with all its varied angles and the many ramifications of each angle. And yet a vast number of people: the employees, those in supervisory capacity, and the executives, connected with all interstate functioning industries must know the ins and outs of the Federal Wage Hour statute. For these reasons it is with a sigh of relief that we turn to Arthur Nevins' hand book. This pocket-size edition can be left on the desk by an executive, or carried about by a plant overseer. But in either case it is a good layman's guide through Wage-Hour labyrinths. We heartily recommend that the book be placed in the hands of all department heads in industrial, particularly textile, plants. Only by knowing the right answers can one be sure of being within the law.

News of Suppliers

Arnold, Hoffman & Co., Providence, R. I., have appointed Walter T. Bunce and W. Chester Cobb managers of the southern territory. Mr. Cobb, who is a reserve first lieutenant, will soon be called into the service. He has been the Charlotte manager for some time. Mr. Bunce was formerly manager of the Drysalters Division of Hercules Powder Co., and came with Arnold, Hoffman & Co. when they purchased the Drysalters Division last year.

Carolina Aniline & Extract Co., Charlotte, N. C., has added E. B. Simpson to its staff in a technical and sales capacity, with headquarters at the Charlotte office. Mr. Simpson has had 30 years plant experience in bleaching and finishing, including such plants as Millville Mfg. Co., Utica-Willowvale Co., Danvers Bleachery, Bradford Dyers Association and Aspinook Co.

Harry Levine is still the director of Textile Testing & Research Laboratories, New York, in addition to his association with Arthur A. Lang, which was announced in these columns last month.

"Industrial Marketing," Chicago, Ill., has given top honor in industrial advertising this year to Edward L. Andrew, of Fuller & Smith & Ross, Inc., for the series "Aluminum, Defense and You," written for the Aluminum Co. of America. Mr. Andrew, who is a vice-president of the agency, featured in the copy the achievements of the Aluminum company in the national defense

Parachute Yarn

OR TARPAULIN DUCK?

FINE parachute yarns to heavy tarpaulin ducks—this represents the range of textiles the Rohm and Haas Laboratories are prepared to treat and finish.

Every problem submitted is studied and analyzed individually by competent textile technicians. The most promising solutions to the problem are then checked under controlled laboratory conditions.

Reproducible results are made possible only through such precision methods as the 24 hour conditioning period before testing.

CONDITIONING— *Every fabric and yarn skein or package is first conditioned for at least 24 hours at 70° F. and 65% relative humidity. This preliminary process is carried out under automatically controlled humidity and temperature conditions in the Rohm & Haas Textile Evaluation Laboratory. The importance of this precautionary measure is emphasized and exemplified in the case of tensile strength determinations on rayon fabrics. In this case if conditioning is not employed the tensile strength may vary as much as 40% from day to day.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes.. Enzymes.. Crystal-Clear Acrylic Plastics.. Synthetic Insecticides.. Fungicides.. and other Industrial Chemicals

NEW, ULTRA-MODERN OFFICE BUILDING of E. F. Houghton & Co., Philadelphia, opened recently. It is part of the modernization program described last month.

program. C. C. Carr, advertising director of the Aluminum company and director of the Association of National Advertisers, was in charge of the series.

Armstrong Cork Co., Lancaster, Pa., has appointed Joseph C. Feagley, vice-president and general manager of the glass and closure division to the board of directors to succeed John J. Evans, Sr., resigned. Mr. Evans has been with the company for 57 years, served as president from 1929 to 1934 and as chairman of the board from 1934 to 1939.

Turner Construction Co., New York reports that its construction work in 1941 totaled the largest annual volume of any of its 40 years of existence.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has promoted George B. Beitzel from manager of sales to vice-president in charge of sales. He has been with the company for 12 years.

B. F. Goodrich Co., Akron, Ohio, has appointed Dr. Howard E. Fritz, manager of its synthetic division for the last seven years, to be its director of research. Dr. Fritz joined B. F. Goodrich in 1925. In 1934 he took over the development and sale of Koroseal. Dr. Fritz succeeds James W. Schade, company research director since 1925, who has announced his retirement.

American Cyanamid & Chemical Corp., New York, which in 1937 acquired the chemical business and plant of Charles H. Stone, Inc., Charlotte, N. C., has announced that Mr. Stone has completed the period of personal services contemplated at the time of the acquisition, but that he will continue his connection with the corporation in an advisory capacity, with offices in the Commercial Bank Building, Charlotte, N. C.

JAMES L. COKER, president of Sonoco Products Co., Hartsville, S. C., who has accepted a position as consultant in the Pulp and Paper Branch of the Office of Production Management, Washington, D. C. Sonoco Products Co. operates a number of paper mills in the production of paperboard used in the manufacture of paper cones, tubes and cores for the textile industry.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has elected Max W. Babb, until now president of the company, to be chairman of the board. He is succeeded as president by W. C. Buchanan, a director and member of the executive committee, who for the last six years has devoted a substantial portion of his time to the Globe Steel Tubes Co., Milwaukee, of which he is president, and in which capacity he will continue. Mr. Babb in becoming chairman of the board will fill the position formerly occupied by the late General Otto H. Falk, which has been vacant since his death in 1940.

Monsanto Chemical Co., St. Louis, Mo., has been awarded the Navy's highly coveted "E", and the Navy Bureau of Ordnance flag. Award was to Monsanto Chemical Co. generally, and to the Anniston, Ala., and Monsanto, Tenn., plants of the company specifically, for outstanding performance in the production of naval ordnance material vital to national defense.

Raybestos-Manhattan, Inc., has appointed F. L. Curtis, general manager of the Manhattan Rubber Mfg. Division, as vice-president of Raybestos-Manhattan, Inc. Mr. Curtis has been associated with the company since its beginning in 1893. He will continue as treasurer of Raybestos-Manhattan, Inc. H. E. Smith, assistant general manager of the Manhattan Division, was appointed to succeed Mr. Curtis as general manager. J. H. Matthews, assistant factory manager, is now assistant general manager.

Oakite Products, Inc., New York, N. Y., industrial cleaning materials, has added two divisions to its nation-wide field service staff. The New England Division, with headquarters in Hartford,

"YOU SURE GOT THE HUMIDIFIER WORKING, DIDN'T YOU, CHIEF?" This dramatic industrial episode is one of twelve done in similarly humorous vein and assembled in the form of a calendar by the Brown Instrument Co., Philadelphia, Pa., a division of Minneapolis-Honeywell Regulator Co. The cartoons are by the well-known cartoonist, Bill Eddy.

PRESENT ARMS!

They come a long way for this . . . and the divine reward is more than adequate compensation for the long wait . . . the long journey. • But what has the knitter to do with a soldier on furlough? • Well . . . in this case the girl is a sweater girl and some knitter played his part in fashioning a garment that does justice to the natural charms . . . helped make a soldier's homecoming an extra special event. • American knitters are producing the world's leading styles in sweaters, dresses, under garments, hosiery. • In the selection of yarn many knitters have turned to Dixie Durene to insure lasting perfection.

Dixie MERCERIZING CO., Chattanooga, Tenn.

AMERICAN COTTON MADE IN U·S·A

Dixie Durene . . . A Product of Controlled Manufacture

FRANKLIN G. SMITH, president of the Osborn Mfg. Co., Cleveland, Ohio, industrial brushes and foundry machines, who has headed the concern continuously for 50 years. When he became president in 1892, the staff totaled eight persons; the present payroll covers 769.

Conn., is headed by T. R. Smith, newly appointed division manager, who will supervise the activities of the eleven men comprising this division. The St. Louis and Southwestern Division, with headquarters in St. Louis, Mo., is headed by S. C. Shank as division manager, who will direct the twelve men of this division.

Acme Steel Co., Chicago, Ill., reports that Local 1129 of the International Association of Machinists, local union of Acme Steel Co's. Archer Avenue plant, has gone on record as pledging itself not to cause any stoppages of production in this plant. Further the members stated, "the management can count on us to do our share and more in bringing this program to complete victory."

York (Pa.) **Ice Machinery** has elected to its board of directors Walter Geist, vice-president of Allis-Chalmers Mfg. Co., Milwaukee.

Jenkins Bros., New York, have materially increased productive capacity of corrosion- resisting alloy valves, permitting faster delivery on these valves for orders having high priority ratings. An innovation for this company is "Certified Castings," each casting being x-rayed as well as pressure-tested.

Worthington Pump & Machinery Corp. has appointed George P. Passmore as works manager in charge of manufacturing at its Wellsville works. Until recently Mr. Passmore has been manager of manufacturing of the South Philadelphia works of the Westinghouse Electric & Mfg. Co.

Stewart-Warner Corp., Chicago, has elected as vice-presidents, Joseph C. Elliff and George L. Meyer. Mr. Elliff is assistant general sales manager, and Mr. Meyer is in charge of the die-casting plant.

Bantam Bearings Corp., South Bend, Ind., a subsidiary of the Torrington Co., has been awarded the Navy "E" Award in recognition of its outstanding performance record in fulfilment of Navy orders. Bantam is the twenty-fifth industrial firm in the country to receive official recognition from the Navy Department for outstanding work in meeting the needs of Navy Ordnance.

POWER PIONEER RETIRES

EDWARD E. PALMER, district supervisor of textile activities, General Electric Co., Boston office, has retired after about 35 years of service in that line of work. He was graduated from the University of Maine in 1899. As an associate of the late Sidney B. Paine, he was closely identified with the earliest applications of electric power to the driving of textile machinery, and was active in pioneer work in that field. He has been succeeded by G. D. Godard, who has been his assistant since 1935. Mr. Godard was graduated from M.I.T. in 1922, and was transferred to the Boston office staff after working in the West Lynn and Schenectady plants.

FIDELITY MACHINE CO., Philadelphia, has just completed a comprehensive plant-modernization job including fluorescent lighting, individual-motor drive, walls painted with white enamel, electric floor cleaning service, steel furniture throughout, new heat-treating department, new inspection laboratory, insulation of roof, installation of compressed air to operate grinding and portable drilling tools, and wire mesh fence around plant. Picture above is view in general office following completion of the improvements.

A. L. FREEDLANDER, president and general manager of the Dayton (Ohio) Rubber Mfg. Co., who has been appointed deputy to the chief of the Rubber and Rubber Products Division of the Office of Production Management. Mr. Freedlander has been in the rubber industry for 28 years. He joined Dayton Rubber as factory manager in 1922. He became president and general manager in 1936.

Scholler Bros., Inc., Philadelphia, Pa., have appointed Dr. Edwin C. Dreby, 3rd, to their research staff. Dr. Dreby received his Ph.D. in physical chemistry from Yale. He was associated with the National Bureau of Standards for several years as a Research Associate.

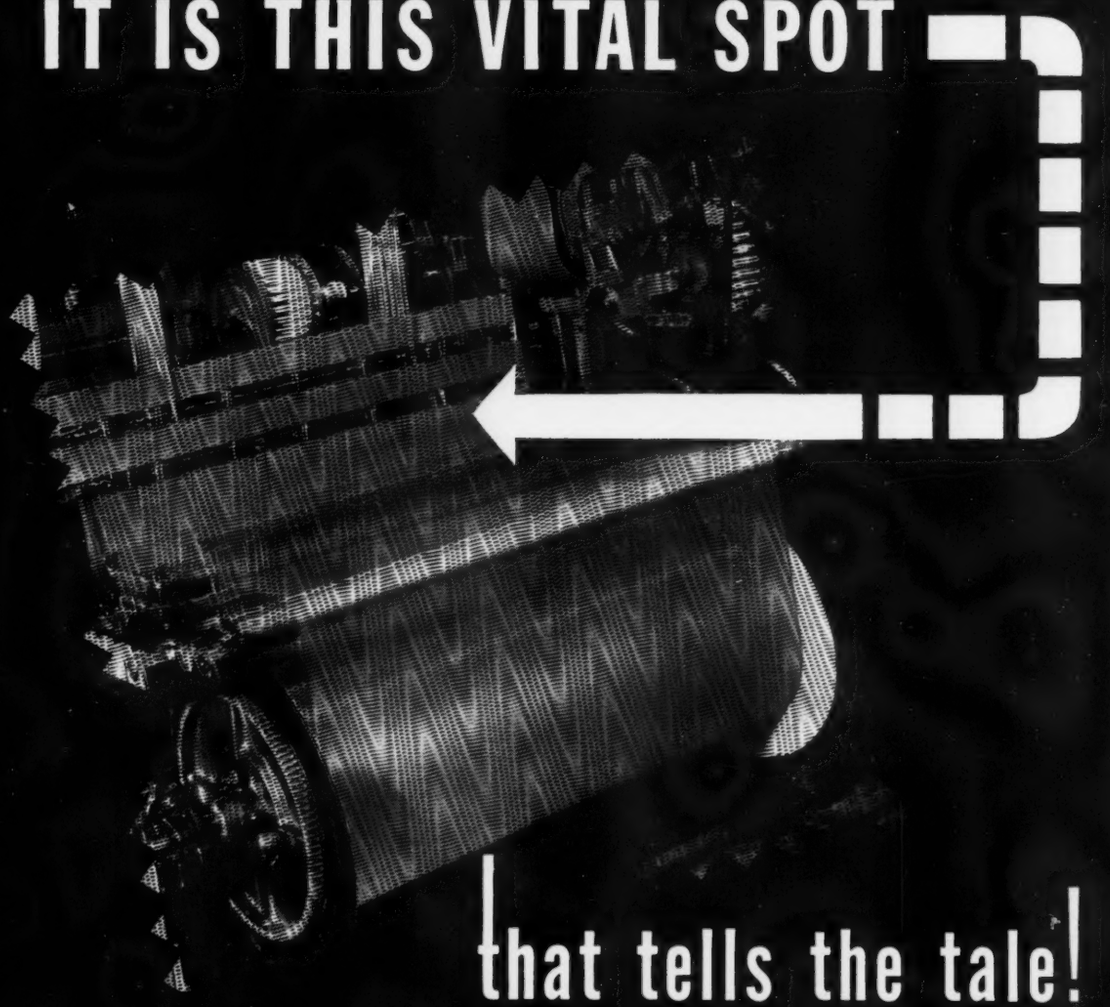
H. A. Salzman, Inc., New York, has appointed Jack Berman as vice-president directing fashion accounts. He resigned from Van Dolen, Givaudan & Masseck, Inc., to accept this connection.

National Industrial Advertisers Association, Chicago, has selected Walter A. Bowe, advertising and public relations manager of Carrier Corp., Syracuse, N. Y., as director-at-large to fill the unexpired term of R. D. Hawkins who resigned when he left the Hammons Machinery Builders, Kalamazoo, Mich., to join the McGraw-Hill Publishing Co. Mr. Bowe has long been active in N.I.A.A. affairs.

T. B. Wood's Sons Co., Chambersburg, Pa., has elected C. O. Wood as president, succeeding T. M. Wood who has become chairman of the board. W. H. Fisher was elected vice-president and sales manager; C. M. Wood, secretary and treasurer; C. O. Wood, Jr., general manager.

Pittsburgh (Pa.) **Plate Glass Co.,** has appointed Stuart M. Campbell of Chicago to be comptroller of the company. He succeeds M. C. Spahr, who retires after more than 50 years of continuous service with Pittsburgh Plate Glass Co.

IT IS THIS VITAL SPOT



that tells the tale!

Whether the harness equipment (heddles, frames, reeds, shuttles, etc.) you purchased was *an investment* or *a purchase*—if the fabric woven is spotted and became seconds—then irrespective what you paid for the harness—it was too much. It pays to invest in a harness made and designed by scientific methods and by a firm with ample facilities, stock, and engineering resources.

The great combination of warp yarns regardless of fibre used, can be ruined by improperly selected harness equipment which must consist of heddles and harness frames suitable to do the work perfectly.

Write the pioneer of the industry.

QUALITY LOOM HARNESS EQUIPMENT

BRANCH OFFICES ALL OVER THE WORLD

Steel Heddle Mfg. Co.

Manufacturers of Superior

FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES

2100 W. Allegheny Avenue Philadelphia, Pa.

FIELD ENGINEERS IN EVERY DISTRICT

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Turbine - electric range drives for textile finishing rangers are described and illustrated in bulletin GEA-3709, recently issued by General Electric Co.

Automatic control equipment for controlling temperatures, pressures, liquid level, and rate of flow are described in catalog No. 41, issued by Mason-Neilan Regulator Co.

British textile industry during the war is described by Frank Nasmith in the December and January issues of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works.

Cleaning methods and a wide range of vacuum cleaners and cleaner attachments are described and illustrated in a folder issued by Ideal Commutator Dresser Co.

Recording equipment for flue-gas analysis are described in catalog N-91-163, issued by Leeds & Northrup Co.

Shortcomings of low-temperature dyeings as revealed by microscopic studies are discussed in the December issue of *Dyelines and Bylines*, the first issue of a house organ, published by Calco Chemical Division, American Cyanamid Co.

Diesel engines of the 4-cycle direct injection totally inclosed type are described and illustrated in bulletin S-500-B38A, published by Worthington Pump & Machinery Corp.

Care and cleaning of hands and arms in industrial plants, including discussion of safe detergents and scouring agents, cleaning routine, and prevention of industrial dermatitis, are described in technical bulletin No. 51, issued by Magnus Chemical Co.

Hand trucks of many types, including general utility trucks, cotton trucks, special-purpose trucks, carboy trucks, case trucks, and 4-wheel trucks, are described and illustrated in catalog T-41, issued by American Pulley Co.

Knitted fabrics of several types produced on interlock machines are described in a series of leaflets issued recently by Wildman Mfg. Co.

Colloid mills in various types and sizes are described and illustrated in a new booklet issued by Premier Mill Corp.

Textile chemicals, including emulsifying agents, flameproofing agents, waterproofing agents, synthetic resins, and synthetic waxes, are listed in a 112-page catalog issued by Glyco Products Co., Inc.

Protective coatings for application to tanks, vats, and other equipment subjected to action of corrosive chemicals are listed and described in a loose-leaf booklet, "The Tocol Line of Protective Coatings," issued by Protective Coatings, Inc.

Fluorescent lighting developments, recommended minimum standards of illumination for various textile and other industrial operations, types of fixtures for specific purposes, price list of lamps, etc., are given in a booklet issued recently by Miralume Division, Hygrade Sylvania Corp.

Lock hooks and their place in a loom harness frame; types; requirements; use; and care, selection, and maintenance are described in a handbook issued by Steel Heddle Mfg. Co.

What war means to the textile industry from viewpoint of upkeep and maintenance problems is discussed in the December issue of *Davis & Furber News*, published by Davis & Furber Machine Co.

Reducing vibration of equipment by use of Korfund steel-spring Vibro-isolators is described in an 8-page booklet, "Extra Machine Hours," issued by Korfund Co., Inc.

A new price list for Silver-Ply stainless-clad steel sheets, plates, and heads has been issued by Jessop Steel Co.

Lubrication practices in knitting of full-fashioned hosiery at Berkshire Knitting Mills are noted in an article, "Christmas Stockings," in the December issue of *Shell Progress*, published by Shell Oil Co., Inc.

Use of steel strapping in packaging and shipping of products for war purposes are described and illustrated in the December issue of the *Signode Seal*, published by Signode Steel Strapping Co.

Corrosion-resistant chemical equipment for use in textile and other industries is discussed, and the chemical resistance of Haveg to a list of chemicals is given in a bulletin recently issued by Haveg Corp.

Application of fluorescent and phosphorescent materials in black-out preparations are discussed by Henry E. Millson in technical bulletin No. 616, issued by Calco Chemical Division, American Cyanamid Co.

Self-lubricating bearings in more than 2,000 sizes are listed, and installation and operating data are given in catalog L-3 issud by Johnson Bronze Co.

Proper lubrication of new machines in the field, of interest to every machinery manufacturer, and a method of overcoming industrial lubrication difficulties, are discussed in a booklet entitled "Now Who'll Lubricate It?" prepared by Fiske Bros. Refining Co.

Automatic control of industrial processes including electric, pneumatic, and combination controls, and the advantages of adequate control equipment, are discussed in catalog 8301, titled "Industrial Control Devices," published by Brown Instrument Co.

Intraplant transportation equipment in slasher departments, weave rooms, and dyehouses is illustrated in a booklet issued recently by American MonoRail Co.

Fiber lubricants, known as Fybrol Nos. 1214 and 1216, for use in processing French- and Bradford-spun worsted, weaving, and knitting yarns are discussed in a technical bulletin issued by L. Sonneborn Sons, Inc.

Variation of humidity is quickly apparent in yarn quality, according to an article in the January issue of the *Traveler*, published by Victor Ring Traveler Co., Inc.

Drives for the cotton industry, rayon industry, and woolen and worsted industry; V-belt drives; Streamliner V-belting; Kable Kord and Kling Kord belting are discussed in a new catalog, "Gilmer Belts for the Textile Industry," issued by L. H. Gilmer Co.

Keeping motors on the job by minimizing voltage variation, proper lubrication of bearings, and correct cleaning are described in Instruction Book No. 501, "Care and Operation of Induction Motors," issued recently by Crocker-Wheeler Electric Mfg. Co.

Cloth-room economies and a new motor-driven revolver shear are among the subjects discussed in the January issue of *The Clothroom Spotlight*, published by Hermas Machine Co.

Care of truck tires and factors governing truck tire service are discussed in detail in the "Operators Handbook," issued by B. F. Goodrich Co.

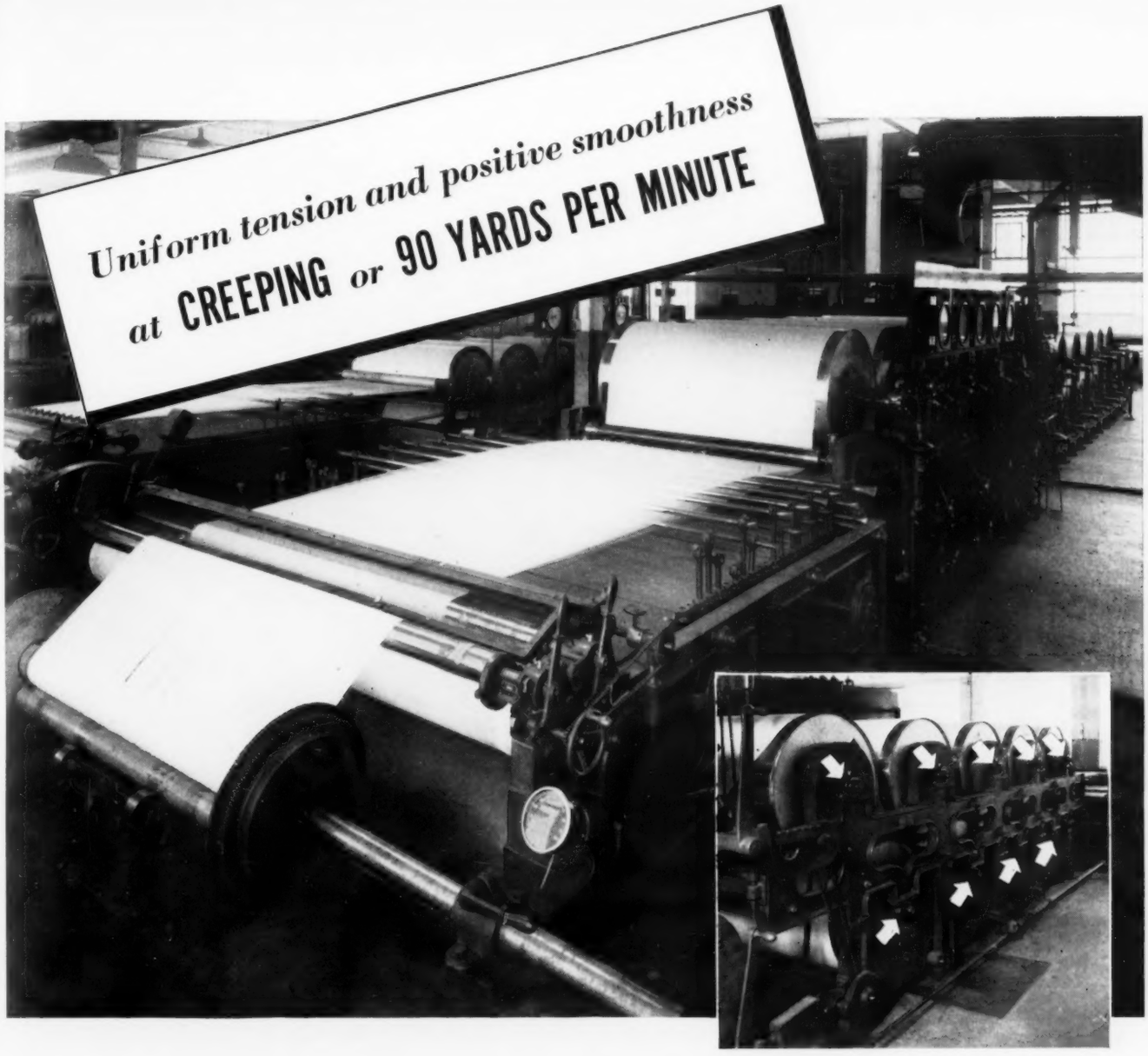
Cleaning of long-draft spinning frames and other types of textile equipment by means of overhead automatic cleaners is illustrated in the January issue of *The Swirling Column*, published by the American Mono-Rail Co.

A description of several mills in Rockingham, N. C.; a report on continuous card strippers; and some notes on preventing bearing troubles in extra shift operation are among the feature articles in the December, 1941, issue of the *Saco-Lowell Bulletin*, published by Saco-Lowell Shops.

How manufacturers meet essential strapping specifications on Government contracts is illustrated and described in issue No. 5 of *Acme Process News*, published by Acme Steel Co.

Selection of electrical equipment for any motor, lighting, or feeder circuit is described in detail in a new edition of the "Quick Selector Catalog," issued by Westinghouse Electric and Mfg. Co.

Socket screws, including set screws, socket head cap screws, socket head stripper bolts, pipe plugs, tee keys, and screwdriver type keys are described in a 10-page folder No. 845 issued by Bristol Co.



80 Fafnirs play an important part in securing friction-free balance of synchronized motion in new 9-cylinder Cocker High Speed Slasher.

This new Cocker Slasher was designed to break production and efficiency records! A speed range of 25 to 1 . . . automatically controlled acceleration and deceleration permitting speed changes without run-over on beams or strain on yarn . . . heavy vibration eliminating frames . . . patented automatic friction control . . . fingertip tension control . . . and many other outstanding mechanical improvements make it one of the most important pieces of textile equipment developed in recent years.

Altogether, 80 Fafnir high quality ball bearings have been used in the Cocker Slasher. The wide variety of Fafnir Textile Bearings made it possible to meet every requirement of good engineering and resulted in greater economy for the manufacturer.

With machinery makers, mill operating and maintenance men, you'll find that Fafnirs are selected for greater economy and efficiency. Fafnir's Balanced Design – larger balls and deeper races – mean greater load capacity and longer bearing life. For almost every spot on every piece of textile machinery, there is a standard or specialized Fafnir Ball Bearing Unit that will save power and cut maintenance. The Fafnir Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta, Birmingham, Boston, Charlotte, Dallas.

FAFNIR
Ball Bearings
THE BALANCED LINE –
MOST COMPLETE IN AMERICA

PROTECTED BY PRECISION WINDING

Photomicrograph of viscose-type rayon, magnified 500 times. (Courtesy Wm. M. Grosvenor Laboratories, Inc.)

There are many types of viscose yarn . . . and each type, like the one pictured in the photomicrograph above, is enough different to be identified under the microscope. There are also many deniers, finishes and methods of oiling rayon yarn, all of which increase need of having a flexible machine and knowledge of precision winding.

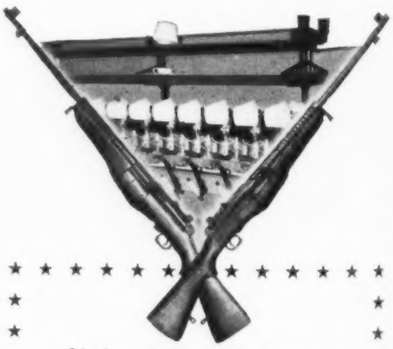
Because the No. 50 Winder is flexible, the rayon yarn manufacturers have adopted it for the production of precise-wound shipping packages. They have also benefited from the combined experiences of Universal engineers who have helped in their development work and in making changes that are required for new yarn characteristics.

Better Pressure Control with Viscose Yarns

A producer of viscose rayon desiring to wind larger-diameter packages had difficulty getting good package formation. The Universal engineer, after careful analysis of all possible factors, traced the difficulty back to the Traverse Frame Dog. Excess drag in the segment was causing uncontrolled pressure to be exerted by the Traverse Frame Back against the winding package, particularly at the larger diameters.

The engineer demonstrated that by reducing tension on the Traverse Frame Dog Lever, it was possible to release all pressure through the Differential Pressure Lever and build better packages.

This illustrates that whether engaged in development work or making yarn changes, each case presents its own problems and must be worked out individually. The combination of flexible No. 50 Machine and the experience of the Universal engineer provides the best opportunity for getting the best winding results.



Universal—manufacturer of precision machinery — aids defense by manufacturing precision parts for military equipment.

More Than 90% of All Synthetic Yarn Is Coned on Universal Precision Winders

SEESONA REG. U.S. PAT. OFF.

UNIVERSAL WINDING COMPANY

Providence Boston Philadelphia Utica Charlotte Atlanta

THE OVERSEERS' CORNER

IDENTIFYING GOVERNMENT ORDERS IN THE MILL

A PETE AND BILL DISCUSSION

As Bill entered Pete's office, Pete was giving instructions to one of his employees. ". . . and here are the cards and a list of the frame numbers," he concluded, handing over a stack of cards and the list. Turning to face his visitor, he said, "This is a fine idea of the super's,—to mark the machines that are making Government goods."

"What's so fine about it?" responded Bill. "We've been on Government contracts off and on for 20 years, and just because we're now in the war, we have to start tagging Government orders. What good is it supposed to do?"

"Why it will make a difference to the men and women running those machines; it will make them work hard to get higher production and better quality. It will make them proud to be making goods for the boys at the front, and it will make all the other employees proud that this mill is doing its share."

"Just wait," said Bill, "until we have to spend time changing those cards to different frames. And what's going to happen when some of the employees get mad because they think somebody else who is not as good a worker is getting all the glory of running frames with cards on them."

Pete was giving instructions to one of his employees

"Even though you think so," replied Pete, "changing cards to other frames won't be any trouble. But about employees who are jealous of someone?—I have a good answer for that. I called all mine together and told them that everyone would get a chance to run Government work sooner or later."

"Well! I don't think it is going to help much, no matter what you tell them," said Bill.

"I think you're just looking for something to get sour about," replied Pete.

Is it advantageous to identify machines on Government orders?

Letters from Readers

Chronic Critics

"Criticism Vs. Cooperation"
Pete & Bill, October, 1941

Editor, Overseers' Corner:

Evidently Bill is one of these that are named in this caption, as shown in his reprimand of Tom Harris.

A victim who becomes militant when criticism becomes ridicule is just an obvious mark pointing out that the critic needs to examine his own method, manner, or even himself, to find wherein he is short of being perfect.

Criticism can be constructive, but when some people criticize, thinking they are infallible and always right, invariably the criticism becomes damnable and can result in nothing short of anger and being loathed, despised, or bitterly hated beyond reason by those to whom the criticism is dealt.

Praise draws much more true cooperation and genuine admiration than ever being on the critical fence, and never being satisfied or pleased with anything regardless of how well done or by whom.

LAMAR FOGEL
(South Carolina)

Overseer, a Manager not a Fixer

"Overseers Working on Machinery"
Pete & Bill, August, 1941

Editor, Overseers' Corner:

In answer to the August question, I say that an overseer should maintain his ability to fix his machines, but not at the expense of the good management of his department or the confidence of his employees. The overseer is the guiding hand of the department, and if he spends all his time fixing his machinery, it is inevitable that costly mistakes and accidents will occur because of insufficient management. The overseer should not, however, get out of touch with his machines, for if he never advises or shows how to fix a machine he will lose the confidence of his employees. If he loses touch with some machine or phase of its operation, he should use his spare time when the mill is not running to brush up on it.

The overseer should maintain a happy medium between keeping sufficiently in touch with his machines so as to main-

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CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

tain the confidence of his employees, and keeping close enough to his managerial problems so as not to lose the confidence of both his employees and superiors.

W. A. NEWELL (*Connecticut*)

No Trouble With Families

"Family Arguments In The Mill"
Pete & Bill, November, 1941

Editor, Overseers' Corner:

It has been my experience that it is perfectly all right for two or more members of a family to work in one department. At the present time I have a father and son working in my department, and they are real workers. I have had as many as three from a family at the same time, with no trouble.

F. J. MCNEICE
(Oxford, Mass.)

Pete's Heart Is in Right Place

"When the Faithful Employee Gets Too Old"
Pete & Bill, September, 1941

Editor, Overseers' Corner:

I have known for a long time that Pete was level-headed and now it seems that his heart is in the right place, too. To my way of thinking, one of the tragedies of our modern industrial era is the habit of kicking out old employees when age begins to creep up on them—it not only deprives them of a livelihood but also it is a severe blow to their pride.

After a man has given 30 to 40 years of loyal service, it seems that he should be retained in some capacity for the rest of what little time he has to live without having it impressed on him that charity is being given him. No doubt, thousands of loyal employees have been driven into labor organizations, and some have become fanatics, just because their loyalty was not acknowledged and rewarded.

R. W. CARR
(Parkersburg, W. Va.)

Living Heroes

Editor, Overseers' Corner:

Recently the newspapers quoted the President as saying that if we are to maintain peace it will require a personal sacrifice by every Amercian citizen, or words to that effect. As I thought over his statement, there seemed so little that I, just a textile worker, might have the chance to do. Yet within three weeks' time our mill was asked to change its schedule in order to save electric power so that defense plants in our State might keep operating, and that meant a sacrifice to each of us.

It meant working during hours when we were not accustomed to it, and staying awake hours that we had used for sleeping; turning night into day, and day into night. It meant hours of physical and mental strain, keeping our minds on the job when our bodies were begging for sleep. It meant being a good soldier—without a uniform or a chevron on display.

We might whine and say the challenge is too great. But is it?

Let's look beyond our horizon at a far greater sacrifice that is being made; and let's ask ourselves if it is noble to cry about interference with our plans when there are thousands upon thousands who would be glad if they only had the chance to make plans. And let's ask ourselves if it is brave to complain about loss of sleep when there are multitudes who fear the night because of air raids.

We may never be heroes riding up Fifth Avenue amid shouts of praise, and we may never wear a badge for valor, but we can accept our challenge by giving the best we have and doing the best we can, willing to sacrifice while our country is in need.

MARTHA B. PITTENGER
(Alexander City, Alabama)

* * *

Dinners for Overseers

HUNTSVILLE, ALA.—The supervisory staff of the Merrimack Mfg. Co. enjoyed a dinner at Monte Sano Lodge recently. W. H. Taylor, superintendent of the mills, was toastmaster for the evening. Sixteen guests were present, including Henry McKelvie, general agent of the Merrimack.

SPARTANBURG, S. C. — Nearly 275 overseers, second hands and section men of the Pacolet Mills, with the company store and office forces, were guests at their annual "President's Supper," with D. W. Anderson, president of Pacolet Mfg. Co., as host. Mr. Anderson spoke briefly. William Ligon, outside overseer, was master of ceremonies.

Overseers' Practical Helps

Improving Pig-Tail Fuses

Here is a simple kink which will save fixers' time and effort. When fixers encounter trouble from corroded pig-tail or plug-type fuses, they generally find it necessary to make a trip to the emery wheel to clean off the contacts. The trip becomes unnecessary providing a flat file is carried in the tool kit. After removing the fuse, on discovering the cause of power loss or on locating the trouble, rub the contact end a few times over the file, after which it can be replaced in the fuse box.

—P.L.O. (*Penna.*)

Rack for Motor Pinions

Motor pinions and change gears for uptwisters, doubler-twisters, etc., can be kept in a more tidy and uniform manner if placed on a panel lettered and numbered to correspond with the change ratio. Usually, pinions and other change gears are stored in bins, making it necessary to pick up several before securing the desired one. The panel obviates this.

For small pinions and change gears, a panel made from 1 in. board or plywood, approximately 36x36 in., more or less, depending upon the number of items to be stored, can be made by inserting spikes through from the back in equal spacings. Where the board is used for several different items, place the smaller-numbered items at the top. For instance: if change pinions run in numbers from 10T to 17T in one series, and from 19T to 26T in a second series, mark the upper rows of spikes, 10T, 11T, etc., up to 17T. For the bottom row, the numbering will be 19T up to 26T. If there are more spikes than numbers, repeat each number as many times as necessary to fill up the space. For instance, 10T, 10T, 10T, 11T, 11T, 11T, etc. Each spike will of course hold a number of pinions. For large, heavy change-gears, long bolts will serve.

When pinions are removed from a machine for change, wash accumulations of dirt and grease from them. Wipe the dried pinion with light machine oil, and place it on its numbered spike on the panel, where it will be ready for instant selection and use.

—W. E. (*Penna.*)

Second Tightening Helps

This bit of information should prove helpful to young loomfixers: Whenever making adjustments or replacements on the picking motion of a loom, I find it advisable to tighten bolts or set screws moderately, using lock washers or lock nuts, and to run the loom for a few picks, allowing the part to seat itself. Then I tighten a second time, using pressure.

The fixer who will make this a habit will find it well worth while.

G. E. HEBERT
West Warwick, R. I.

Worsted Open-Drawing

Hints on increasing production to meet war-time needs

IN WAR TIME the object should be to obtain the maximum production possible from each machine. Many worsted spinners are receiving orders of a magnitude which they would not have had under normal conditions. With large orders, the opportunity presents itself to check over a set of drawing to see whether it is correctly balanced. One operation in the sequence of the usual eight or nine may be inefficient and consequently hold up production at that point. This will ultimately reduce the output from the whole set. Such a bottleneck may be apparent owing to the piling-up of bobbins from the preceding box, but it may be less noticeable. In any event, it is advisable to find out what the machine ought to do and whether or not it is doing it.

Such checking is simplified considerably if a production gage point is calculated. Production per week = gage point × r.p.m. of front roller × no. of spindles (or heads) × wt. of sliver in drams per 40 yd.

This is applicable to any boxes with the same front roller diameter. A separate gage point will be required for the gill boxes, owing to differing front roller diameter, but after the gill box the front rollers down the drawing are usually the same size. The revolutions per minute of the front roller can easily be counted with the aid of a watch; the gage point then is found as follows: circum. f.r. × min. per wk. × efficiency divided by 36 in. per yd. × 40 (standard length) × 256 drams per lb. × 100.

The figures obtained for each operation are illuminating and give a clue to the action required. The fault, if any, may be with an operative who has not been properly trained or is slow in movement; the box may require slowing down or speeding up; or the sliver weight may need adjusting. Possibly a combination of these several factors will bring the desired result.

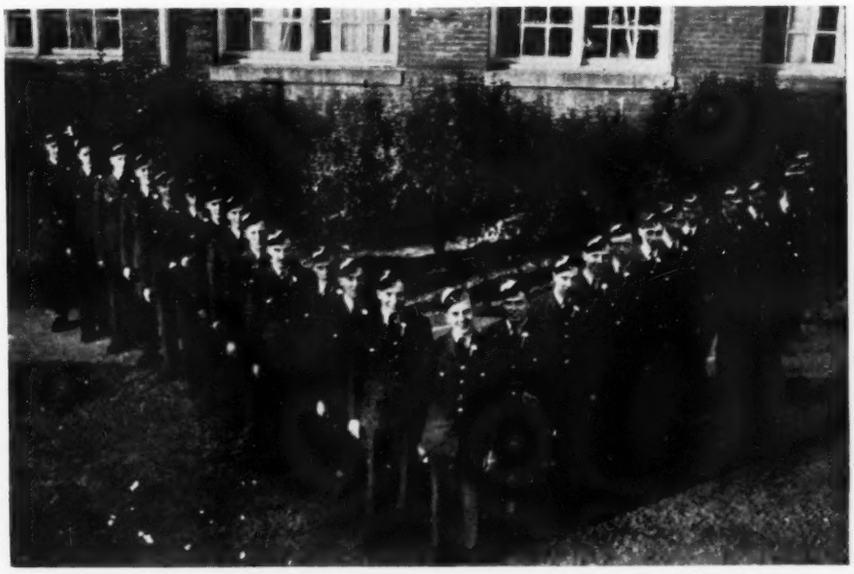
Owing to war conditions, many spinners are producing counts of yarn different from their usual run. Where, for example, a spinner has normally processed through his drawing 4 dram per 40 yards roving, the thick counts of single khaki filling have enabled him to spin direct from reducer bobbins. The discerning spinner has at the same time as far as possible processed fine counts from 2-dram roving, in order to make full use of his idle rovers.

THE GREATEST PROBLEM of maintaining output from sets of drawing occurs, of course, when the drawings are adapted for medium weights of rovings and the demand arises for fine dram weights without a corresponding proportion of thicker sliver weights to balance it. Difficulties such as the above may be overcome in many instances by good management in deciding in what order certain lots are to be put through the drawings.

A fact which should be mentioned at this point is that many spinners could with safety slightly increase their draft in spinning without any detrimental effect, and thereby reduce their drawing costs. Blends of wool and synthetic fibers are now becoming rather a regular thing. Longer drafts than for 100% wool can usually be employed with such blends, thus permitting a heavier weight of roving to be made. As an example, a blend of 50% 64s wool and 50% 3-den., 4-in. staple rayon could quite easily be spun to 2/48s from rovings weighing 3½ drams per 40 yd. This, assuming that the counts are spun 5% light, means that the spinning draft is about 9.6. Assuming that care is taken in the drawing, there will be no complaints. 100% rayon staple will stand considerably more draft, and will spin quite well with a draft of 10 to 12, although for single filling, where levelness of yarn is an essential, it is better to keep in the region of 6 to 7.

After carefully working out the production from each operation, it may be found that the speeds could be increased or the material brought through thicker, providing that the finisher, reducer, and rover output could be increased accordingly. There is a limit to the speed of the unsteadied spindle, and attempts to run at higher speeds only cause more ends down and a lower production, owing to more frequent stoppage of the box. It should be remembered, however, that old boxes can be moderized and the unsteadied spindles replaced with a steadied type, fitted with an oil reservoir in the footstep rail and ball bearing supports at the top of the spindle and also in place of the usual collar. Owing to the steadier running because of the bearing at the spindle top, a speed of 2,400 r.p.m. is quite possible. The productive capacity of such converted boxes is thus increased without requiring additional floor space.

Abstracted from an article in the December, 1941, issue of *Textile Manufacturer*.



R. A. F. CADETS VISITS SYLACAUGA—Avondale Mills buses recently picked up 93 R.A.F. cadet pilots at the municipal airport in Tuscaloosa and they were entertained at Beverly Hall with a barbecue chicken dinner. Dinner was served and prepared by Mrs. Dave Remson, Mrs. Harry McGowan, and Clarence Owens assisted by Misses Hazel Harry, Hazel Jones, Inez Rape, Frances Homes, Mae Clifton, Nina Skelton, Irma Horn, Vilma Cost, Zara Becket, Jane McGowan, Edna Kelly and Mrs. Marie Liles. Harmon Mims and his orchestra played and Charles Schmittberger, of Ft. McClellan and New York, sang a patriotic song of his own composition entitled "Keep 'Em Flying". After dinner the young British fliers toured through the Mignon Village after which they were taken through the mills. They were the guests of Hugh M. Comer, executive vice-president of Avondale.

QUESTIONS & ANSWERS

Shuttles Flying Out

Technical Editor:

Please send us a list of causes of shuttles flying out on woolen looms. We are occasionally troubled in this respect, and want to make a thorough check, so we can eliminate all possible causes. (8832)

One of the most common causes of flying shuttles is inaccurate alignment of the hole worn in the picker, with the point of the shuttle. To check this, first place the shuttle firmly against inside box guide and reed. Then, slide the picker forward until the shuttle point goes fully into the hole. Notice whether the opposite end of the shuttle moves either away from or toward the reed. If it does, so adjust the layend that this movement is eliminated.

Again, flying shuttles may be caused by some part of the reed being in front of, rather than in back of, the reed adjusters. This causes a hump, which throws the shuttle out.

Improperly mated shuttles may also give trouble, especially when some almost new ones and some very old ones are put in the same loom. To ascertain whether this may be the cause of your trouble, lay the shuttles on a smooth, flat surface, then bring the tips together. If some are higher or lower than others, flying shuttles may be expected.

Picker spindles also sometimes cause flying shuttles. Whenever a new picker is put on a loom, the loomfixer should make sure the inside end of the spindle centers with the picker raceway and the inside bearing of the spindle, when the spindle is tight in the outside spindle bracket.

There are also numerous other causes of flying shuttles, many of them met with so infrequently that it is difficult to catalog them. If the suggestions above do not eliminate the trouble, the loomfixer should make a thorough check up of the loom, as this may bring to light some improper adjustment that is causing the difficulty.

Trouble with Filling Defects

Technical Editor:

We are having trouble with filling defects in the plushes we weave. Please advise some of the causes for broken picks; also tight and loose picks. (8831)

Broken picks can be caused by harnesses which are out of line, by ground warp that is either too tight or too slack, or by dry and harsh filling. Tight picks are likely to be due to shuttle tension; lumps, waste, or knots in filling yarn; or to filling which runs off the top of quills and sticks between quill & shuttle. Loose picks can result from too little shuttle tension, too much tension on the ground warp, or loose crankshaft boxes. (TW 7/38)

Trouble Keeping Roving Even

Technical Editor:

On a 38-in. finisher with 3 doffers, taking off 24 good ends, the rings are as follows: top doffer, 24 rings 18/32 in. wide; middle doffer, 24 rings 20/32 in. wide; bottom doffer, 24 rings 22/32 in. wide. Waste rings are both 1½ in. wide. Top and bottom doffers are 12 in. in diameter; middle doffer is 10 in. in diameter. Wire is No. 35 steel. Speeds are: top 12 turns per min.; middle 14 turns per min.; bottom 13 turns per min. Our fancy is covered with straight-tooth, open-set, No. 28 wire, 3-3-3, 1¼ in.

Trouble is experienced keeping roving even, on all three spools. The middle spool is rougher than the other two at all times and on all classes of work, from 1 run to 4 run. Most of the stock being carded consists of about 40% rayon, balance carbonized wool. We would greatly appreciate your opinion as to whether or not these rings are the proper ones to use, whether or not the doffers are being operated at correct speeds, and any suggestions you could offer to remedy this difficulty. (8807)

The three doffer system requires great care and attention to produce even and smooth roving. It is of the utmost importance that the rings be lined up properly; any overlapping will cause uneven roving between the individual ends. Great care must also be exercised in grinding so that the wire is not only sharp but also smooth and perfectly true.

In this inquiry the figures given show that the top doffer turns at approximately 37.5 ft. per min., middle doffer 36.5 ft. per min., and bottom doffer 41 ft. per min. From this it seems that the middle doffer is not getting its full amount of stock from the cylinder. This may be caused by the wire not being in as good working condition as that on the other two doffers. Or it may be the bottom doffer is so close to the middle doffer that it is brushing some of the stock off. If this latter is the case, it would also be a reason for the middle-doffer roving being rougher. Should this not be the case, and there is plenty of space between the middle and bottom doffers, we would recommend putting the 10-in. doffer on the top and using a 12-in. doffer on the middle.

The difference between the widths of the wire on the three doffers is all right, but it may be that an attempt is being made to take off too many good ends, causing an overloading of stock on the rings, with resultant rough and uneven roving. On a 48-in. card, many mill men advise not taking off more than 60 good ends on roving to be spun heavier than 6.4 typp (4 run, 21⅓ cut).

Since you state that the roving of all three doffers is rough, the trouble may be due to the card being overloaded, or some other condition farther back. Taking for granted that the cylinders and workers are in good condition, it may be that too much carding is taking place. Try more open settings if settings are now closer than 30 gage. Also, speed up the workers.

As the doffers have No. 35 wire, we take it that the cylinders are covered with either No. 34 or No. 33 wire. In this case, possibly a No. 28 fancy is too coarse for stock containing 40% rayon. A stiff fancy may throw an excess amount of fly and cause the stock to lie unevenly on the surface of the cylinder, which in turn will cause uneven roving. You might try a No. 31 fancy bent-tooth 4–3–5 set, 1¼ in. tooth.

It is also well to check back to the picker room to see how the mixes are prepared. When running rayon wool blends, the rayon should first be run through the picker unoiled. The wool stock should then be run with enough emulsion to lubricate the stock properly and also to allow for moisture take-up of the dry rayon. After picking the wool, blend both stocks together and repick a sufficient number of times to insure proper blending. Without proper care being exercised in picking mixes of this type, no amount of care in the carding can insure correct roving weights and even yarn.

Rayon Hosiery Shows

Technical Editor:

Inclosed find one full-fashioned stocking, knitted entirely of viscose rayon. The boot of this stocking is 75 den., with 20 turns of twist. I woulld like to ask your opinion as to the cause of the horizontal streaking throughout the boot. (8835)

The horizontal streaks are partial courses in which the stitches are too short. The difficulty is doubtless mechanical and due to uneven tension of the viscose rayon. This may be caused by a worn or rough carrier tube, rusty snapper, cut felt in the tension box, or similar condition anywhere in the path of the yarn. Also, underwinding on the supply package will cause the same result.

Fabrics For Military Purposes

Data on two types of osnaburgs for sand bags; water-repellent duck; wristlets

7,900,000 SAND BAGS have been asked for by the Army, to be used in field fortifications. It is probable that additional and larger procurements will be needed. The fabrics specified are osnaburgs of two classes, designated as Classes B and C in U. S. Army Specification No. 6-280A. Other applicable specifications are Corps of Engineers Tentative Specifications No. T-1451A for bags and No. T-1452 for processing and mildew-proofing.

Fabrics can be made of cotton or a mixture of cotton and waste, but must be of sufficient quality to meet requirements. Fabric defects which affect appearance or serviceability are not allowed, and selvages must be of equal width and of proper tension. Color unless otherwise specified shall be natural unbleached; where color is specified, it shall show good fastness to weather when exposed for 10, 20, and 30 days.

Requirements of the finished fabrics are as follows: Class B—29½ or 39½ in., 40x30, 8 oz. per sq. yd., strength of 90 lb. warp and 90 lb. filling when tested by 1x1x3 grab method; Class C—35½ or 39½ in., 40x28, 7 oz. per yd., strength of 70 lb. warp and 70 lb. filling when tested by 1x1x3 grab. Weave in both cases shall be plain. [Although not stated in the specification, the following gray constructions are approximately those required: Class B—30 or 40 in., 40x30, 2.28 or 1.71 yd. per lb., 7's warp and 5's filling; Class C—36 or 40 in., 40x28, 2.28 or 2.06 yd., 7.5's warp and 5.5's filling. Although the constructions, weights, and yarn sizes of these two fabrics are nearly similar, it should be noted that the difference in required strengths would seem to permit the use of lower grade cotton or a higher percentage of waste in Class C.]

Bag fabric shall be mildew-proofed by an agent which penetrates, rather than coats the outer surfaces of fibers, and which does not materially affect flexibility, durability, inflammability, absorption, or sewing qualities of the fabric, nor shall the processed fabric be greasy, sticky, or tacky at ordinary temperatures. There is no objection to processing changing the color of a fabric, but treatments which impart colors other than light green or brown require approval of the contracting officer. Processed fabrics are tested for effectiveness of treatment by methods described in Corps of Engineers Tentative Specification No. T-1452.

Each bag is to be made from a single piece of cloth, sewn on two sides or on one side and bottom, and after sewing is to be turned so that seams are inside. Finished dimensions are to be 26½ in. length and 14 in. width. Tolerances of plus 2 and minus 3 in. in length, and plus 1½ and minus 1 in. in width are allowed; product of length times width in inches of finished bags shall not be less than 360 nor more than 382. A 24-in. tie string of sisal binder twine which meets requirements of U. S. Army Specification No. 13-3 shall be attached to each bag.

COTTON DUCK with water-repellent finish was asked for in two widths—34 and 36 in.—by the Quartermaster Corp. in recent invitations. Of the narrower width, 2,500,000 yd. were sought, and of the wider, 1,800,000 yd. The invitation states the following:

The fabric shall have minimum requirements of 10.2 oz. per sq. yd., 2-ply yarns in warp and filling, 52x42 thread count, and 150x90 lb. when tested by the 1x1x3 grab method. Color shall be an approved shade of olive drab with good fastness to light and laundering when tested by methods described in Federal Specification CCC-T-191a, and a water-repellent finsh shall be applied as follows: 60 parts by weight of micro-crystalline parafine, melting point 124-125° F., 40 parts by weight of petrolatum, melting point 148-150° F., and 1 to 1½ parts by weight of copper stearate; the finished fabric shall contain 4½ to 6% of the mixture, which shall be evenly applied so as to make certain a complete penetration.

[Approximate gray construction required to meet finished specification: —36 in. and 38 in., 50x44, 13/2 warp, 13/2 filling, 11.25 oz. per sq. yd.]

KNITTED WOOLEN WRISTLETS have been called for in large quantities in recent QM bid invitations. Specification requirements, as listed in QM invitations, include the following:

Stock—Fleece or pulled wool not lower than 56s grade.

Yarns—Two-ply, spun on worsted system.

Physical Requirements—Circular, seamless, rib knit, with approximately 1½ in. expanding stitch at top and bottom. Finished wristlets, doubled up, must measure approximately 3 in. wide at bottom, 5 in. wide at top, and 5 in. in length. No less than 12 wales and 20 courses per in. Weight 10 oz. per doz. pr. (approx.).

Color—Approved shade of olive drab; must have good fastness to laundering, perspiration, and weather.

Acme photo

Army is asking for 7,900,000 sand bags

LOOMFIXERS' MANUAL

Cotton Loomfixers' Manual Now Available In Book Form

IN AUGUST, 1937, when publication of the Cotton Section of the "Loomfixers' Manual," was started in TEXTILE WORLD, we said: "In normal times there is a constant procession of men passing in and out of the loomfixing trade. On one end are the experienced loomfixers who have reached the age of retirement or who are leaving to assume other positions. On the opposite end, are the inexperienced men, mostly younger, entering the trade to learn it from the old-timers so as to be prepared to fill the latters' places as needs arise. During the depression this parade was interrupted. There were more than enough of experienced men still active to fill the jobs available and few novices came into the mills. Hence, the industry has lately been faced with the necessity of training new men quickly and well. Many mills have established loomfixing schools. Mills, schools, and would-be loomfixers are eager for printed instructions on how to adjust, maintain, and repair all varieties of looms."

Now with all looms pounding fast and furious—many of them on fabrics for war purposes—and with no reserve of trained loomfixers available, there is a greater need than ever before for information on both the fundamentals and the finer points of loomfixing.

Accordingly, Mr. Moberg's articles on cotton loomfixing have been available in book form prior to completion of the series in TEXTILE WORLD. The book is published by McGraw-Hill Book Co., 330 West 42nd St., New York, under the title "Cotton Loomfixers' Manual." The price is $2.50 a copy.

Included in this 197-page "how to" book giving in detail practical information on all important phases of fixing cotton looms are chapters on the following subjects: Loom Construction, Take-Up Motions, Loom-Driving and Brake Motions, Letoff Motions, Harness Motions, Picking Motions, Warp Stop Motions, Filling Stop Motions, Protector Motions, Automatic Filling Motions, Filling Feelers, Filling Cutters, Whip-roll Motions, Temples, Box Motions, Box Multipliers, and Shuttles.

This manual has been prepared in such a way that it can serve as a text-book for instructors in loomfixing or as a self-study guide for those who wish to learn the art of loomfixing or to improve their knowledge and skill.

WOOL SECTION—Chapter XIII—Continued

By EUGENE P. SCHREMP

Harness Motions

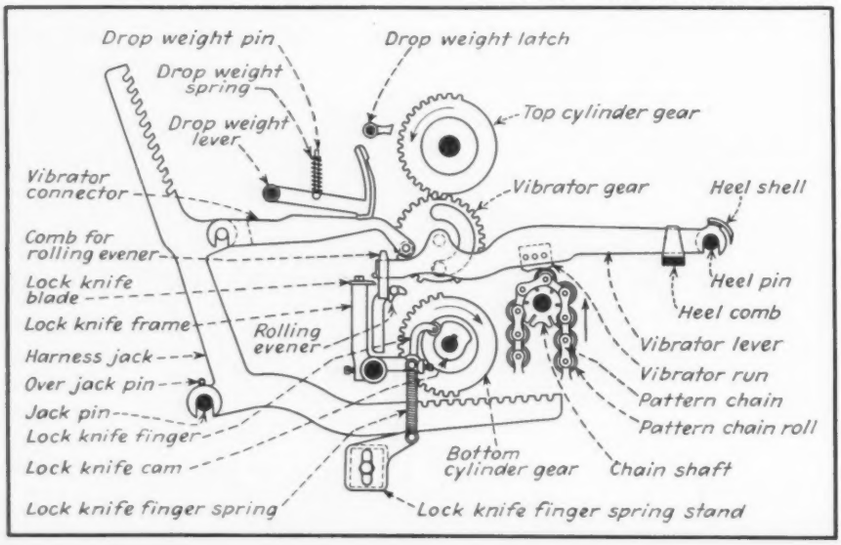
A SECTIONAL VIEW of the Crompton & Knowles harness motion is shown in Fig. W19. The top and bottom cylinder gears turn in opposite directions. For each harness there is a vibrator, consisting of a lever, gear, and connector. The vibrator gear has a blank space at one point equal to three teeth; opposite this point is another blank space equal to one tooth. The pattern chain is built of rolls and tubes, commonly called risers and sinkers. A riser under a lever will lift the vibrator so that when the top cylinder gear turns, it will engage the vibrator gear and lift the harness through the connector and jack. A sinker will allow the lever to drop and engage the bottom cylinder gear, which will lower the harness through the same means. It should be remembered that the top cylinder lifts the harness and the bottom cylinder lowers it. Harness cylinder gears are adjustable and can be moved by loosening the two set-screws. A fixer should use a socket wrench on these set-screws. If an open-end wrench is used, there is danger of it slipping, and cut and bruised hands may result. The setting of these cylinders depends largely upon the type of fabric that is to be woven.

If the cylinders are set even with the box section, the harness will be crossing late, with the lay close to front center. Moving the cylinder ahead of the box section will cause the harness to cross early. Late harness timing is used for hard weaves, heavy yarns, and, sometimes, to eliminate reed cut filling. Early timing is used when there is danger of kinks. The usual practice is to set the loom for a late harness crossing on heavy-weight woolens. With light- and medium-weight fabrics, best results are usually secured with an early harness crossing.

Fig. W20 shows a new-style lock knife mechanism which is used on most of the W types of Crompton & Knowles looms. The cam on the top cylinder shaft is adjustable and can be moved by loosening the two headless setscrews. If the harness cylinder gears are advanced or retarded, the cam adjustment should be checked. The lock knife should be completely in before the first tooth of the bottom cylinder gear engages the vibrator gear. The purpose of the lock knife is to hold the levers

Fig. W19. Harness motion for C & K looms

Illustrations courtesy of Crompton & Knowles



down when they engage the cylinder gear. There should be 1/32 in. clearance between the lock knife and the ends of the lowered levers. The lock knife should not move out until the vibrator gears have clicked in place. The lock knife should also move out early enough completely to clear the ends of the vibrator levers. It is not good practice to advance the cylinders more than five teeth ahead of the box section. Both top and bottom cylinders should strike the vibrators at the same time.

To time the lock-knife cam, turn the head motion so that the levers going up meet the levers going down half way. Turn the lock-knife cam so that the cam-lever roller will be at the center of the high part of the cam. Tighten the setscrews and turn the head motion forward and then backward to see whether the lock knife clears the end of the levers.

The top and bottom cylinder gears are the same. When a gear has been repaired by welding, the gears should be reversed so that the repaired part of the gear will be used at the finish instead of at the beginning. In re-

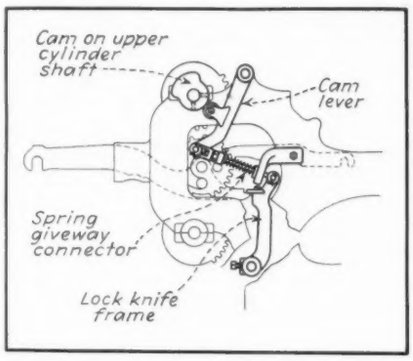


Fig. W20. Lock knife mechanism for W types of C & K looms

moving a top cylinder gear, the handwheel fixer should pull off with a wheel puller. Marking the position of the lock knife cam will save time in re-assembling. Cylinder gears should be changed when the teeth become damaged; otherwise harness skips will result.

When making any repairs on the head motion, a loomfixer should be certain that all parts are worknig correctly before he leaves the loom. With fancy work, using a large number of harness, skips are sometimes hard to distinguish in the cloth, and may run for some time before they are noticed.

Vibrator gears should be inspected when a new warp is put in. If all the harnesses are lowered, the teeth on the bottom can easily be seen. Care should be taken in removing a vibrator, as the

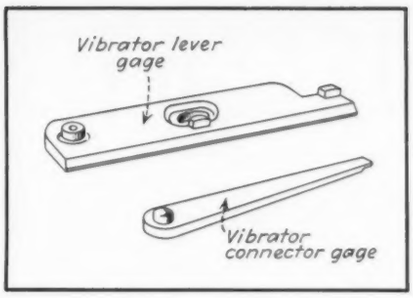


Fig. W21. Gages for checking levers and connectors

evener comb is made of cast iron and the teeth are likely to break if the lever is twisted.

To remove a vibrator properly, the harnesses should be raised. Determine which vibrator is to be removed and lower it by turning the gear with a screw-driver. This will raise the drop weight, and it can easily be lifted and hooked by the latch. A long screwdriver should be inserted between the lifted vibrator connector and those that are down, so that the connector will rest on the round part of the blade. Turning the head-motion handwheel and prying slightly with the screwdriver will lift the connector from the harness jack.

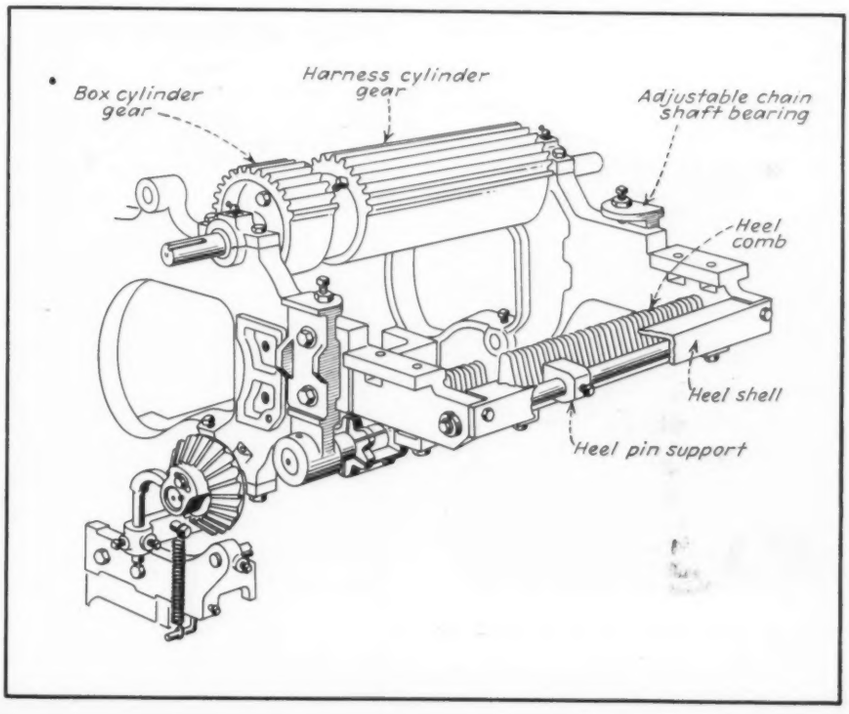
When a vibrator is removed from a loom that has only run a short time, it may be necessary to insert a screwdriver in the slot at the end of the connector, and open it slightly. The slot should be closed to its original position before replacing. The heel shell should be turned by removing the cap screws at each end and loosening the capscrew in the heel-stud bushing. The vibrator can now be removed by lifting it at the heel and pulling it straight back.

The lever is taken apart by driving out the two rivets in the vibrator gear. A pin punch of the same diameter of the rivets should be used to remove them. New rivets of the proper length should be used for replacements. Care should be taken to strike the rivets and not the lever or connector. The vibrator gear must turn freely and not bind at any point. All vibrators should be kept in perfect alignment; otherwise the vibrator gears will not mesh properly with the cylinders. Gages shown in Fig. W21 are furnished by the loom builders to check the levers and connectors. If the vibrator run is worn, it should be replaced. The levers can be bent slightly to fit the gage. The vibrators should rise and fall in unison and not bind at any point.

Fig. W22 shows the new style chainshaft holder. Vertical adjustments are made by adjusting screws in top of the chainshaft bearing. With a bar of chain rolls under the vibrator run, adjust the shaft so that there will be 1/32 in. clearance between the teeth of the top cylinder and the vibrator gear. Care should be taken to have the chainshaft level so that the gears will have the same clearance at each end. The clearance between the vibrator gears and the bottom cylinder is controlled by the vertical position of the evener comb. This is set correctly when the head motion is assembled.

It should be remembered that raising or lowering the chainshaft while a vibrator is in a raised position also changes the position of the ends of the lever at the lock knife.

Fig. W22. Chainshaft holder



FIXING HOSIERY MACHINES

CIRCULAR MACHINES — Chapter XIV. Davis Rubber Lay-In

By JULIAN W. HUGHES

IN THE EVOLUTION of self-supporting anklets and half-socks with elastic tops, at first, rubber thread or Lastex, was inserted in successive courses at the upper edge of the top and was withdrawn after knitting had progressed for ½ to 1 in. As the rubber was run under tension, and the courses ran only a short distance and not the entire length of the ribbed top, there was too much pressure at one place on the leg, which irritated the skin. Also, the presence of the rubber thread caused the top to contract more at the top edge, which presented a ragged unsightly appearance. To overcome this, a rubber lay-in device was developed for feeding elastic yarn so that the same number of courses would be distributed the full length of the ribbed top as shown in Fig. 30, without causing the fabric to contract excessively. The device was developed and patented by Robert E. Davis. With slight alterations, it can be applied to all standard makes of ribbers, as well as to knitting machines with larger diameter (3¾ in.) cylinders.

Ribbed tops are knit in continuous succession and later separated by cutting apart, or by pulling out the selvage thread. Each top consists of a tuck stitch course, or a one-course welt, which prevents raveling and forms the top edge when the tops are separated, a loose course for topping, and a topper's margin. At the beginning of each top, the rubber yarn is inlaid and anchored securely during the knitting of the tuck stitch course. After the rubber is anchored, it is inlaid spirally between a succession of regular knitting courses for the full length of the top, through the loose course, and into the topper's margin where it can be automatically withdrawn, clipped, and held out of action until the beginning of the next top. Figs. C30 and C31 illustrate how the inlaying is done on a three-feed ribber. In Fig. 31, it will be observed that the rubber thread, *R*, is interlocked in the wales 9, 11, 10 and 12 between every three courses of regular knitting.

Since the rubber thread is laid in between every three courses, instead of between all courses, substantially the same amount of rubber can be laid in the full length of the top as formerly was laid in an inch, thus distributing the pressure more evenly on the wearer's leg. And by virtue of the more even distribution of rubber, contraction of the top is more uniform and eliminates puckering at the top edge.

If rubber thread is laid in on a ribber with standard sized cylinder, the knitted tube will contract to less than normal diameter when stitches are cast off the needles. This not only makes the top too tight, but causes puckering where the top joins the leg of the hose.

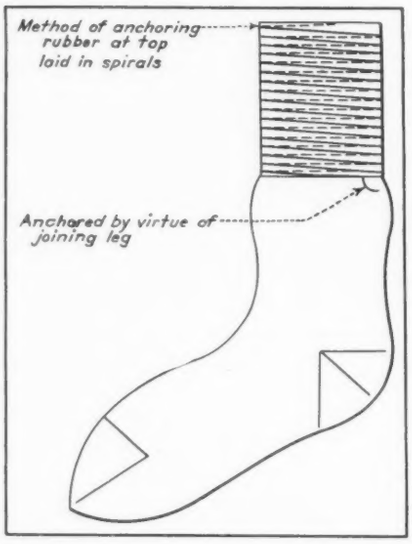


Fig. C30. Rubber yarn is anchored in welt or tuck stitch course and spirals through length of top

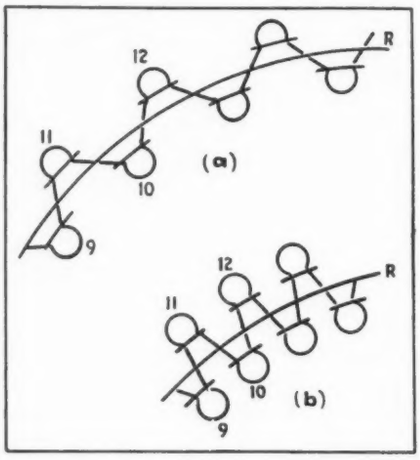
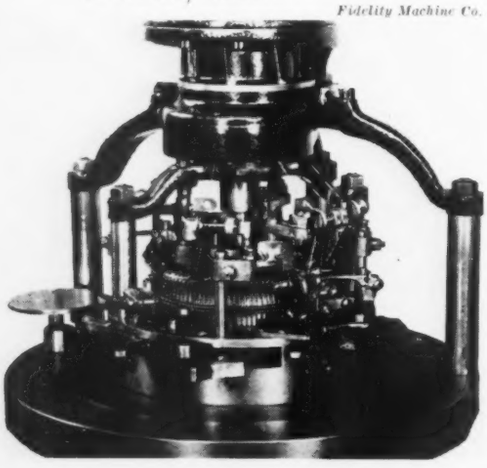


Fig. C32. Rubber yarn inlaid between cylinder and dial needles: *(a)* under tension on the ribber, *(b)* off the needles

Fig. C33. Davis rubber lay-in applied to Fidelity ribber

Fidelity Machine Co.



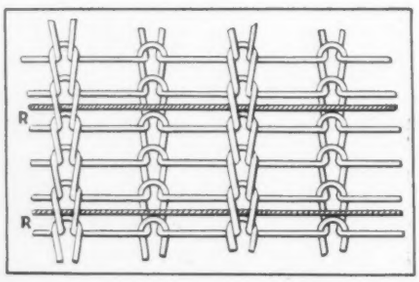


Fig. C31. Rubber yarn, *R*, is interlocked in wales

By using a larger than normal cylinder with, of course, the same number of needles, the fabric comes off the needles approximately the same size as that knit on the ordinary ribber.

For example, to equip a ribber knitting tops for a 220-needle half-hose machine with the lay-in device, it is necessary to supply the ribber with a 5½-in. diameter cylinder, instead of the customary 3½-in. cylinder, and more tension must be put on the rubber thread, rather than as little as possible which was formerly the case. The 5½-in. cylinder ribber will have 110 needles in the cylinder and 110 in the

dial, just as in the standard 3½-in. ribber. The only difference is wider spacing of the needles in the larger cylinder and dial.

In Fig. C32, 9 and 10 represent dial stitches, and 11 and 12 represent cylinder stitches. The line, *R*, indicates the relative position of the rubber yarn; Fig. C32a shows the fabric and rubber on the cylinder under tension, and Fig. C32b shows the same fabric after it is off the cylinder and has contracted. Fig. C33 shows the lay-in attachment as applied to the Fidelity ribber.

When the lay-in attachment is properly installed—set to feed efficiently, and timed corrected—it is necessary to make only occasional adjustments for normal wear. The clipping knife must be kept sharper than would be necessary for clipping other yarns because rubber cannot be clipped with a dull blade. Some fixers state that the knife cuts better if lubricated with glycerine.

The lay-in attachment is set to feed the rubber thread just over the verbe of the needle cylinder and just below the dial in order to lay the rubber between the wales of the cylinder and dial needles. It is timed to feed so that one complete course will be anchored by one complete course of tuck stitches or welt.

When rubber thread is being inlaid on a ribber with 5½-in. cylinder, or a knitting machine with 3¾-in. cylinder, such as Scott & Williams K-G or B-5 model, only enough tension should be put on the rubber so that the tube will contract to about 2½-in. width when it comes off the needles. It is obvious that more tension can be used on the larger cylinder than on the smaller cylinder, making both about the same size off the needles.

FULL-FASHIONED MACHINES—Chapter XIII. Friction Rods and Boxes

By WALTER A. SIMOND

THE FRICTION RODS (splicing shafts) wear rapidly unless they are kept clean and properly lubricated. When the bearings in which the rods slide become worn so as to allow the friction rods to be warped by the friction load of the boxes, they should be replaced with new bushings. Special tools for this work can be obtained from the machine builders for the older type of machines in which the friction rod bearings were not bushed. Loose friction rods sometimes cause the friction boxes to impart a rocking motion to the carrier rods, thus making bad selvages. If castor oil is used on the friction rods, it is best not to wipe off the old oil; however, the advantage of friction grease is that it allows the rods to be kept clean. Best practice is to clean and apply a small amount of grease to each box at the beginning of each work period of 4 hr. After applying the grease to the rods, the boxes (unlocked) should be moved back and forth several times to spread the grease evenly; and then the boxes should be locked and moved a short distance to determine the amount of friction on each box. It is unsafe to run a machine when any locked box cannot be moved by hand. When a machine has been idle for a few hours, it should never be started until the boxes are freshly greased, as the seizure of a friction box on the friction rod may cause a costly Coulier smash. In making connections of armored hose for the water-cooled friction shaft, just enough of the wire covering should first be removed to allow for the hose clamps.

FRICTION BOXES having worn end bearings will over-run their normal stopping positions and cramp on the friction rod after their carriers contact the stops, thus overloading the machine. With some types of friction boxes, when the end bearings wear, the housing should be replaced; other types, including those of the split type, may be rebushed. Unless both the friction rods and boxes are kept in good condition, bad selvages will be formed and the Coulier cam and gears will soon be damaged or destroyed.

It is important that the malleable iron shoes be long enough to fit the box; any lost motion there causes a loss of carrier lead and uncertainty as to the position of the carriers at the end of the Coulier stroke; and when a friction leather gets loose on a shoe, it has the same effect as a short shoe. When a carrier rod rebounds, the shoes should be removed from that carrier's friction box to make sure the leathers are not loose, glazed, or worn until the rivets have come in contact with the friction rod. Glazing of leathers is usually caused by the use of too little friction grease. No definite directions can be given as to the amount of friction grease to use, since that depends on the condition of the friction leathers and other variables. It is, however, an important matter which must be learned by experience. On Reading machines having friction-box stops, the stop screws should be kept in adjustment to allow a full stroke of the carrier rods, but to prevent an overrun or twisting of the carrier boxes.

FRICTION LEATHERS should be replaced when worn from stock of the same thickness as the original, and the thickness must be uniform to obtain a full bearing surface on the friction rods. To remove the old leathers, since the shoes are thin and may be broken by careless handling, it is best to lay the shoes on the bench flat side down, against a stop at one end of the shoe; then from the other end drive a narrow cold chisel —¼ in. wide is recommended—between the leather and shoe to cut off the rivets. Hold the chisel at such an angle as not to cut into the shoe. The headed ends of the rivets will punch out of the shoe easily. The shoes should then be thoroughly cleaned to remove all trace of glue or oil by burning or boiling in caustic soda—for the latter method, take the same precautions as recommended for cleaning jacks. The following directions for replacing friction leathers are quoted from the January, 1934, issue of the *Reading Record*.

"Le Page's glue or water glass (silicate of soda, concentrated solution) may be used for this purpose. If glue is used it should be heated so as to flow freely and applied to the surfaces of the leather and iron after they have been roughed with a file or rasp. Two or more coats of glue should be applied, then placing apiece of ⅛-in. rod or shafting against the leather, they should be clamped in a vise and the glue allowed to set for at least 24 hr.

"If water glass is used, see that the parts are free from oil, because oil will neutralize the effect of the water glass. Thus it can be seen that friction leathers that have been pulled out in service but are still serviceable cannot be replaced with this substance. When putting in new leathers by this means, clean the cast-iron shoe thoroughly and rough the surfaces of both shoe and leather, coat each surface with water glass, clamp in vise as before, and let set at least 24 hr."

After drilling for the rivets, the leather should be counterbored for the rivet heads so they will lie 1/32 in. below the surface of the leather after the rivets are secured. It is best to file the headed ends of the rivets down flush with the outer surface of the shoe so as not to interfere with the friction springs when they are locked.

Still Another Record for Rayon

New all-time highs set in 1941 by domestic output and consumption

THE 1941 annual production of rayon in the United States surpassed all previous records by a wide margin, according to the *Rayon Organon*, published by the Textile Economics Bureau, Stanley B. Hunt, editor. Total domestic production of rayon (yarn plus staple fiber) in 1941 amounted to 573,230,000 lb., an increase of 22% over the previous record of 471,170,000 lb. in 1940. Table I shows a comparison of rayon production data for recent years.

New all-time production highs were "the order of the day" for all divisions of the rayon industry during 1941. Rayon filament yarn production at 451,204,000 lb. was 16% greater than the 1940 output, the previous record year. Both the viscose-cuprammonium and the acetate branches of the yarn industry achieved new production records of 287,459,000 lb. and 163,745,000 lb. respectively. The 1941 domestic production of staple fiber at 122,026,000 lb. compared with an output of 81,098,000 lb. in 1940, an increase of 50%; marked gains were made in the production of both viscose and acetate staple fiber.

The 1941 domestic consumption of rayon likewise was a new all-time high with a total of 586,016,000 lb., an increase of 20% over the previous 1940 record. Of this 1941 consumption figure, 452,390,000 lb. were rayon filament yarn and 133,626,000 lb. represented rayon staple fiber available (domestic production plus imports).

The 1941 consumption of rayon filament yarn at 452,390,000 lb. was 16% above the previous record set a year ago. Both the viscose-cuprammonium and acetate divisions reached new levels.

The consumption and production of rayon filament yarn was essentially equal in 1941, because the demand was limited entirely by what the industry could produce. The stocks of rayon

TABLE I—United States Rayon Production in Millions of Pounds

	1941	1940	1939	1938	1937	1936	1930
Rayon Filament Yarn.	451.2	390.1	328.6	257.6	321.7	277.6	127.3
Rayon Staple Fiber...	122.0	81.1	51.3	29.9	20.2	12.3	0.4
TOTAL.....	573.2	471.2	379.9	287.5	341.9	289.9	127.7

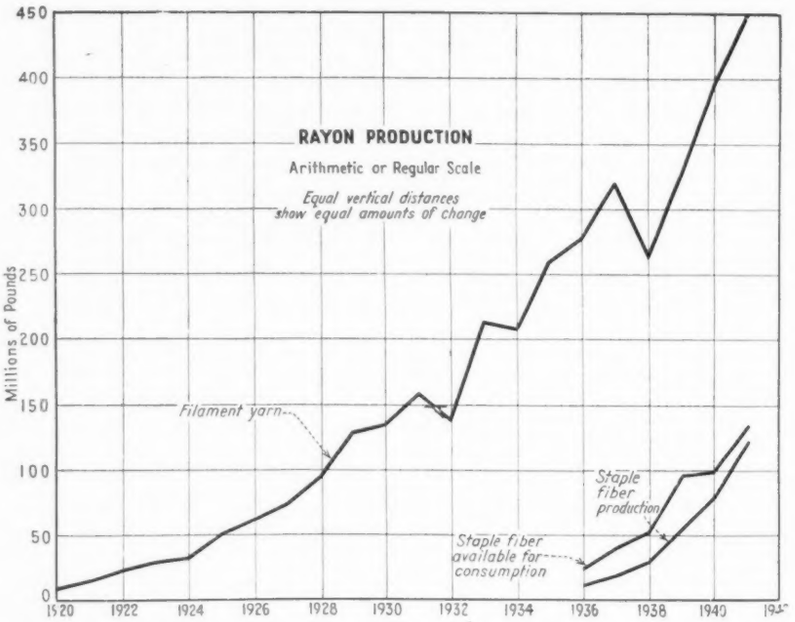


TABLE II—Distribution of Domestic Rayon Yarn Shipments by Trades *(Millions of pounds and percent)*

	Hosiery lbs.	%	Other Knit lbs.	%	Broad Woven lbs.	%	Narrow Woven lbs.	%	Miscellaneous lbs.	%	Sub-Total Knit lbs.	%	Sub-Total Woven lbs.	%	Total Shipments lbs.	%
1925.....	10.7	20	10.5	20	26.1	50	2.9	5	2.6	5	21.2	40	29.0	55	52.8	100
1926.....	10.3	20	15.0	29	21.2	42	2.2	4	2.6	5	25.3	49	23.4	46	51.3	100
1927.....	16.7	20	28.9	34	31.5	37	3.3	4	4.6	5	45.6	54	34.8	41	85.0	100
1928.....	14.7	17	32.9	37	32.5	37	3.2	4	4.7	5	47.6	54	35.7	41	88.0	100
1929.....	18.8	16	43.7	37	45.4	39	3.1	3	5.4	5	62.5	53	48.5	42	116.4	100
1930.....	16.5	15	38.0	34	49.5	44	3.0	3	4.6	4	54.5	49	52.5	47	111.6	100
1931.....	21.1	14	48.7	31	75.6	49	4.0	2	6.2	4	69.8	45	79.6	51	155.6	100
1932.....	19.0	13	38.0	25	84.6	56	3.9	2	6.3	4	57.0	38	88.5	58	151.8	100
1933.....	17.0	8	41.3	20	141.3	67	5.5	2	5.9	3	58.3	28	146.8	69	210.9	100
1934.....	14.1	7	39.9	21	131.3	68	4.8	2	4.6	2	54.0	28	136.1	70	194.7	100
1935.....	14.7	6	47.9	19	179.5	71	5.2	2	5.4	2	62.6	25	184.7	73	252.7	100
1936.....	16.3	5	51.0	17	217.0	73	8.2	3	4.9	2	67.3	22	225.2	76	297.3	100
1937.....	12.6	5	38.9	15	202.5	76	7.4	3	4.8	2	51.5	19	209.9	79	266.2	100
1938.....	14.1	5	39.6	14	209.3	76	6.7	2	4.1	1	53.7	20	216.0	79	273.8	100
1939.....	16.2	4	49.9	14	278.6	77	9.1	3	5.8	2	66.1	18	287.7	80	359.6	100
1940.....	16.4	4	54.0	14	304.4	78	8.2	2	5.7	2	70.4	18	312.6	80	388.7	100
1941.....	25.9	6	57.9	13	349.3	77	10.5	2	8.8	2	83.8	19	359.8	79	452.4	100

TABLE III—Classification of Domestic Yarn Production by Denier Size in Percent

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
Total Fine Deniers (112 denier and finer)...	9.9	11.5	14.2	19.1	26.0	26.4	26.8	21.0	24.3	25.5	32.2	32.7	34.1	32.3
Total Medium Deniers (113–162 denier).....	74.0	72.9	71.7	69.0	64.8	62.8	59.5	62.1	61.7	60.4	53.9	52.4	52.9	51.9
Total Coarse Deniers (163 denier and coarser).	16.1	15.6	14.1	11.9	9.2	10.8	13.7	16.9	14.0	14.1	13.9	14.9	13.0	15.8
Average Denier Spun.....	Data not available						135	140	136	134	129	124	123	125

yarn in the hands of rayon yarn producers both at the beginning and the end of 1941 amounted to only a few days' supply.

The imports of rayon staple fiber for consumption in 1941 were lower than in 1940, the figures being 11,600,000 lb. and 17,736,000 lb. respectively. Imports since the middle of 1941 have been negligible, and the outlook is for little or no imported staple.

AS COMPARED with previous years, rayon yarn consumption by principal consuming industries, shown in Table II, showed two significant changes during the year 1941. One change was the larger consumption of rayon yarn by the hosiery industry. The greater use of rayon yarn in hosiery resulted from the cessation of raw silk imports from Japan in August and subsequent events which led to the institution of the present silk substitution program whereby rayon yarn is allocated to former silk users. Upwards of 9,000,000 lb. of rayon yarn were consumed by the full-fashioned hosiery industry during 1941.

A second important 1941 change in distribution occurred in the acetate divisions' shipments to "other knit" trades, the principal one of which was warp knitting. The yarn so consumed went not only to the underwear trade, but also to the increasingly-popular jersey outerwear trade.

A SIGNIFICANT DEVELOPMENT in the production of viscose-cuprammonium yarn during 1941 was the reversal of the general trend to finer denier yarns which has prevailed over recent years. The average denier of the viscose-cuprammonium yarn production increased from 132 denier in 1940 to 139 denier in 1941. But it should be noted that although the per cent of total yarn production represented by the fine denier yarns (112 denier and finer) declined from 29.2% in 1940 to 26.5% in 1941, actually the poundage output of the finer yarns was greater in 1941 because total viscose-cupra yarn production increased substantially from 1940 to 1941. The increased output of heavier deniers in 1941 reflected, among other things, the growing output of heavier denier, high-tenacity yarns for truck and airplane tires, and self-sealing gasoline tanks for combat aircraft.

The over-all industry rayon production (Table IV) does not show the shift to heavier deniers as markedly as is indicated by the viscose-cuprammonium data. The acetate yarn produced continued to emphasize the finer denier yarns, thus tending to neutralize the heavier denier trend of the viscose-cuprammonium process yarn.

TABLE IV—Basic Annual U. S. Rayon Data (in thousands of pounds; percentages in italics)

Yr.	RAYON FILAMENT YARN: Domestic Production: Viscose Cupra & Nitro		Acetate		Total		Total Domestic Shipments	Imports	Domestic Consumption	Exports	RAYON STAPLE FIBER: Domestic Production		Imports		Available for Consumption		Yr.
1911	363	*100*	.....	....	363	*100*	315	1,800	2,115								1911
1912	1,111	*100*	.....	....	1,111	*100*	1,117	1,750	2,867								1912
1913	1,816	*100*	.....	....	1,816	*100*	1,566	2,430	3,996								1913
1914	2,422	*100*	.....	....	2,422	*100*	2,444	2,740	5,184								1914
1915	3,885	*100*	.....	....	3,885	*100*	4,107	2,450	6,557								1915
1916	5,778	*100*	.....	....	5,778	*100*	5,741	900	6,641								1916
1917	6,544	*100*	.....	....	6,544	*100*	6,429	370	6,799								1917
1918	5,846	*100*	.....	....	5,846	*100*	5,827	180	6,007								1918
1919	8,228	*99.4*	50	*0.6*	8,278	*100*	8,219	1,072	9,291								1919
1920	10,005	*98.8*	120	*1.2*	10,125	*100*	7,238	1,480	8,718								1920
1921	14,866	*99.2*	120	*0.8*	14,986	*100*	16,475	3,276	19,751								1921
1922	23,947	*99.5*	120	*0.5*	24,067	*100*	22,631	2,116	24,747								1922
1923	34,839	*99.7*	120	*0.3*	34,959	*100*	29,529	3,029	32,558								1923
1924	36,208	*99.7*	120	*0.3*	36,328	*100*	40,289	1,954	42,243								1924
1925	49,429	*96.8*	1,620	*3.2*	51,049	*100*	52,836	5,441	58,277	148							1925
1926	60,073	*95.8*	2,620	*4.2*	62,693	*100*	51,284	9,345	60,629	400							1926
1927	70,108	*93.2*	5,147	*6.8*	75,555	*100*	85,021	15,034	100,055	401							1927
1928	91,232	*93.8*	6,000	*6.2*	97,232	*100*	87,984	12,144	100,128	196	165	*45.2*	200	*54.8*	365	*100*	1928
1929	112,954	*93.0*	8,445	*7.0*	121,399	*100*	116,410	15,055	131,465	223	500	*25.8*	1,436	*74.2*	1,936	*100*	1929
1930	117,543	*92.3*	9,790	*7.7*	127,333	*100*	111,627	6,340	117,967	345	350	*40.4*	518	*59.6*	868	*100*	1930
1931	135,249	*89.6*	15,630	*10.4*	150,879	*100*	155,556	1,804	157,360	314	880	*55.2*	715	*44.8*	1,595	*100*	1931
1932	116,379	*86.4*	18,291	*13.6*	134,670	*100*	151,838	197	152,035	653	1,100	*33.4*	2,196	*66.6*	3,296	*100*	1932
1933	172,402	*80.8*	41,096	*19.2*	213,498	*100*	210,949	934	211,883	1,110	2,100	*38.8*	3,320	*61.2*	5,420	*100*	1933
1934	170,307	*81.8*	38,014	*18.2*	208,321	*100*	194,694	77	194,771	2,509	2,200	*90.9*	221	*9.1*	2,421	*100*	1934
1935	202,010	*78.4*	55,547	*21.6*	257,557	*100*	252,650	26	252,676	2,219	4,600	*75.8*	1,461	*24.2*	6,061	*100*	1935
1936	214,926	*77.4*	62,712	*22.6*	277,638	*100*	297,347	255	297,602	1,813	12,300	*49.2*	12,721	*50.8*	25,021	*100*	1936
1937	239,316	*74.4*	82,365	*25.6*	321,681	*100*	266,202	872	267,074	1,397	20,244	*49.6*	20,614	*50.4*	40,858	*100*	1937
1938	181,470	*70.4*	76,155	*29.6*	257,625	*100*	273,800	262	274,062	1,457	29,861	*56.2*	23,197	*43.8*	53,058	*100*	1938
1939	231,283	*70.4*	97,342	*29.6*	328,625	*100*	359,572	176	359,748	1,879	51,314	*52.0*	47,403	*48.0*	98,717	*100*	1939
1940	257,124	*65.9*	132,947	*34.1*	390,072	*100*	388,684	45 est.	388,729	1,498 est.	81,098	*81.8*	17,736 est.	*18.2*	98,834	*100*	1940
1941	287,459	*63.7*	163,745	*36.3*	451,204	*100*	452,383	7	452,390	3,200	122,026	*91.3*	11,600	*8.7*	133,626	*100*	1941

United States production and imports of rayon staple fiber before 1928 were either non-existent or nominal.

est: Estimated.

NEWS OF THE MONTH

40¢ Minimum Wage for Cotton and Related Industry

A unanimous recommendation of a 40¢ minimum hourly wage for textile workers was filed with Wage-Hour Administrator Thomas W. Holland Jan. 22, by Textile Industry Committee No. 39 (covering cotton, rayon, silk and some further processing), after the shortest hearing on the Division's record. This committee was the third for that section of the industry defined as "textiles" since the Wage-Hour Law became operative. The first set 32¢ and the second 37½¢. On Jan. 30, the Administrator set a hearing on the recommendation for Feb. 20, 10 a.m., Room 3114, Department of Labor.

Congressional Style Show

Behind closed doors, a House subcommittee on agricultural appropriations served as a select audience one day last month for the only style show ever held as part of Congressional hearings. It was all in the interest of economy, science, and the Agriculture Department's Bureau of Home Economics.

Pretty girls from the Bureau demonstrated new styles and new creations in cotton to illustrate the Bureau's work and to support its request for continued financial support. One appeared in a "victory outfit" for women, a weatherproof, trousered affair resembling a ski suit. Then there was an outfit for farm girls who will operate tractors in the place of men off to the war, a mechanic's costume and a new type of peaked collapsible "coolie" hat.

May Be No More Nylon for Civilian Use

Newspaper despatches from Washington dated Jan. 29 carried a forecast that there would soon be a complete allocation of Nylon for military purposes. Directly affected will be manufacturers of full-fashioned hosiery who have found Nylon their best raw material. Possible increase in hosiery use of fine rayon yarns will spread the effect of this restriction into those fields which normally use fine rayons as there will not be enough fine rayon to go around.

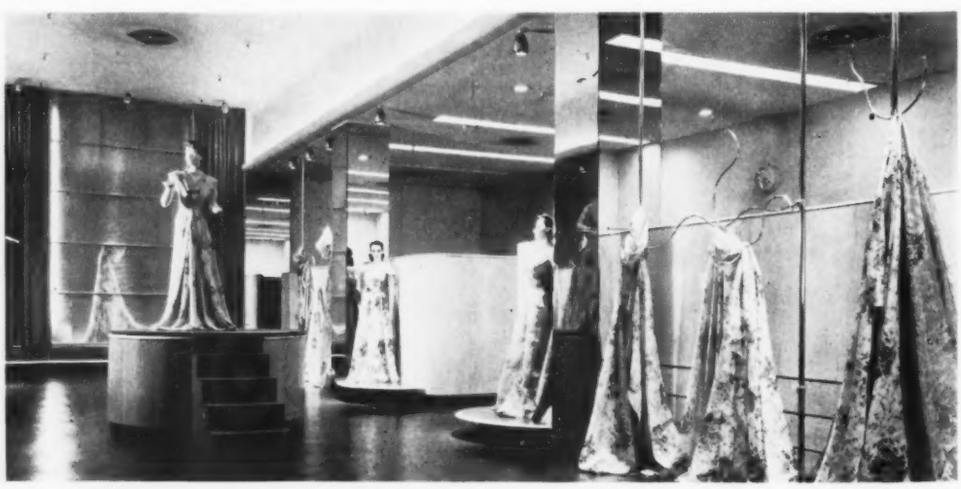
Previously the DuPont company had discontinued the manufacture of certain deniers from 37 to 195 which normally went to non-hosiery uses, and had withdrawn its 46 and 70-denier hosiery yarns from shipping schedules, replacing these deniers with the 30-denier in order to increase yardage of its current available raw material. Still earlier in the month the DuPont company had announced a reduction of 20% in the allotments of Nylon for hosiery mills and a reduction of 40% for weavers. It is understood that the Government is recognizing the need for protecting its parachute supplies and that Nylon is the logical fiber to eke out the existing limited supplies of silk.

Full-Fashioned Mills May Get War Work

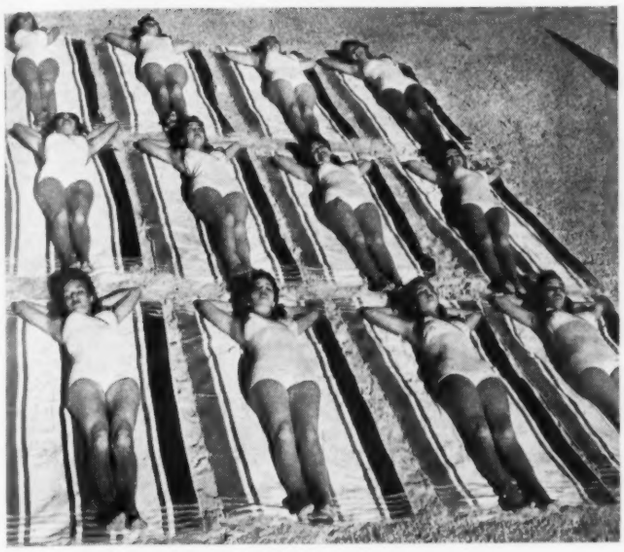
Despatches from Charlotte, N. C. quote Taylor R. Durham, executive secretary of the Southern Hosiery Manufacturers Association, as having found approval in Washington circles for the proposition that full-fashioned hosiery plants, restricted by limitations on yarn supplies, be considered as prospective assembly plants for military goods. He believes the employees engaged in the delicate work of producing women's full-fashioned and seamless hosiery, could readily be trained to the job of assembling precision instruments, gas masks, etc. The future of the full-fashioned hosiery machines, isolated by this turn in events, remains a very real concern to the full-fashioned hosiery manufacturers. There are estimated to be installed about 16,000 of these machines, worth, after depreciation, about $150,000,000.

New Cooperative Research Plan Announced

The Executive Committee of the Textile Research Institute, Inc., after several conferences with the Scientific Advisory Committee of the Textile Foundation, has developed a plan for a new type of cooperative researches in the industry. These will supplement the type of cooperative researches, already under way, whereby a specific subject has been chosen, and subscriptions to the research on that



PACIFIC MILLS' newly decorated cotton and rayon showrooms at 214 Church Street, New York pictured above were opened on Jan. 20. A decorative background for displaying fabrics has been created through the use of color, fluorescent lighting, modern glass, bronze-tinted mirrors and unusual display fixtures. There are eleven private showrooms panelled in "rift" oak, which open off this central lobby. "Open House" featured the launching of this new interior, designed by Alfons Bach, to the trade, and Worth Street executives, totaling many hundreds, thronged to the event.



CANNON BEACH TOWELS form a striking background for twelve bathing beauties suntanning at Miami Beach, Florida.

subject solicited from a large number of mills interested in it.

Under the new plan, a relatively small group of mills in any of the various divisions of the industry may get together under the auspices of the Textile Research Institute and agree to subscribe a certain amount of money each year for at least a predetermined length of time for the prosecution of research on problems affecting the specific branch of the industry concerned. A committee appointed on behalf of the subscribing companies will confer with Dr. Milton Harris, director of textile research for both the Institute and the Foundation, and after consultation with the Executive Committee of the former, a program for the coverage of that particular research will be outlined. During the period through which this program is continued, the committee representing the contributors will continue to serve in an advisory capacity.

Any manufacturers interested in learning more about possibilities under this plan are invited to write to Edward T. Pickard, executive secretary, Textile Research Institute, 10 E. 40th Street, New York.

Palm Beach Suits Advance 75c

The Goodall Co., on Jan. 29, announced an increase in the price of the standard Palm Beach suit to a basis of $19.60 at retail, an increase of 75¢. Up to March 1 the wholesale price will be $11.30, and after March 1 it will be $11.70. No price changes were made on the Goodall tropic weight, Goodall tropic weight de luxe, Sunfrost and Springweave lines.

Bigelow War Sales Division

The organization of a Bigelow-Sanford "War Sales Division" was announced recently by the Bigelow-Sanford Carpet Co. It has been established for the purpose of securing war material contracts and sub-contracts from Government agencies and private industry. A group of 35 experienced men from Bigelow's regular sales staff has been formed into this new division and these men have received specialized training at the company's plants at Thompsonville, Conn., and Amsterdam, N. Y. They are now combing the country for war orders on textiles and related products. At a recent

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TEXTILE PURPOSES

QUALITY
AND
SERVICE

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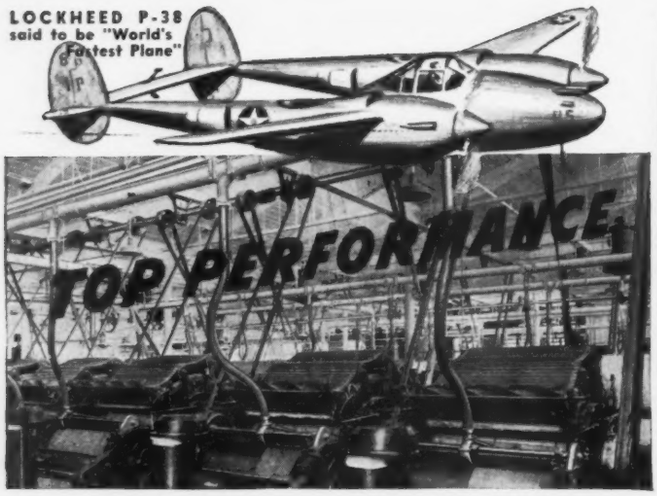


Room of 554 cards stripped by Abington Vacuum System

Vacuum Stripping means MORE and BETTER card room production!

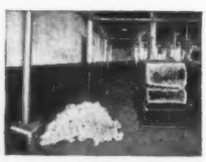
Under today's war conditions it has become vitally necessary to GET THE MOST OUT OF EXISTING MACHINERY. Abington Automatic 100% Vacuum Stripping makes this possible in the card room because:

1. It strips MUCH FASTER, keeping cards in production for a definite gain of 4% or more.
2. It assures MAXIMUM EFFECTIVENESS OF FIBRE SEPARATION. Card wire points remain sharp because stripping is done without brush action on the wires.
3. It FURTHER ENHANCES PRODUCT QUALITY because the rapid, automatic stripping operation often makes it possible to use an extra stripping per shift, as additional Quality Insurance.
4. It RELEASES MAN-POWER, because stripping is accomplished with 60% to 90% less labor hours.

USED BY 700 MILLS ON COTTON & WOOL
(Note—On wool, the benefits are fully as great)

Process Waste Collecting

The Abington Vacuum piping also serves as a complete Waste Collecting System, delivering all material to a central waste house. View at right shows Waste Station for top flats, comber noil, etc., while lower view shows flexible down-take for cleaning under machines, sweeping, etc. Saves collecting and cleaning costs, and promotes improved cleanliness of machinery and aisles.



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Card Strippers — Yarn Dyeing Systems — Weaver's Knotters

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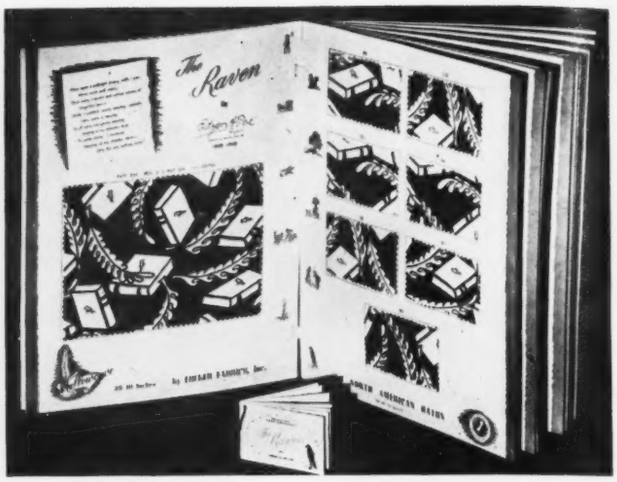


PRIZE POETRY PRINTS are one of the season's novelties: sponsored by Folker Fabrics, Inc., and designed by Samuel B. Schaeffer. The theme of each of the 11 patterns on Melloweave crepe is a well-known American poem. Above is shown the page in a promotional booklet featuring "The Raven" by Edgar Allen Poe. With each dress of these fabrics goes a little booklet (shown in foreground) containing the poem. The fabrics are woven of North American Rayon.

meeting the group chose the apt slogan "Keep 'Em Weaving."

Despite the fact that regular rug and carpet business may be curtailed, it is hoped that the heavy production schedule enjoyed during 1941 will be maintained at approximately the same rate this year. Research departments of the company have been working on the development of new products which will contribute to this program.

"Mrs. Typical Consumer"

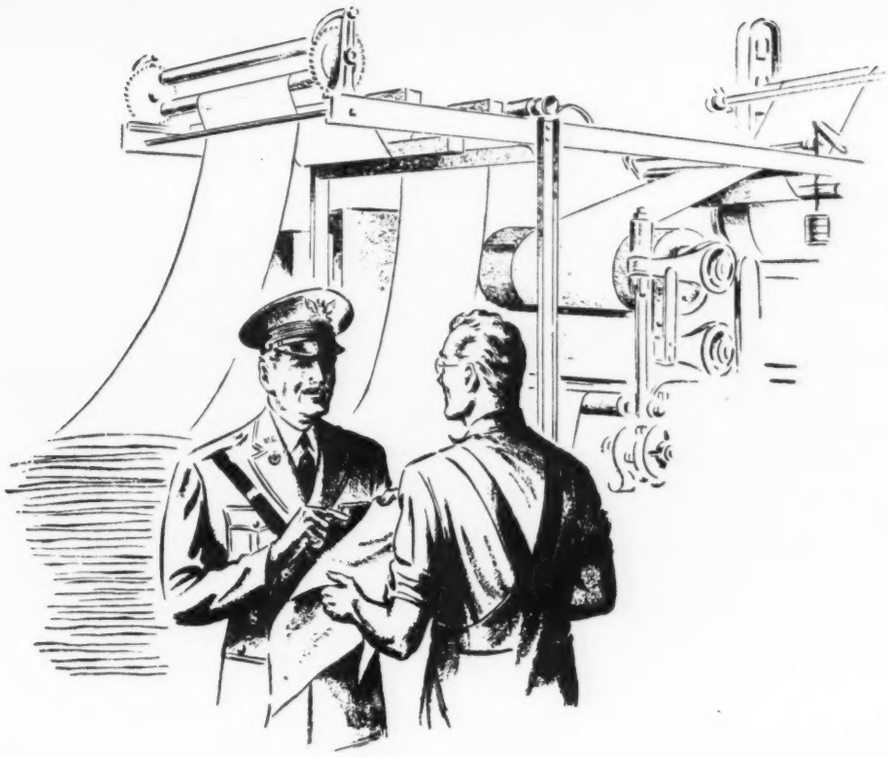
Mrs. Typical Consumer for 1942 was Mrs. Clarence C. Cox of Greenville, S. C., whose husband is in the shipping control department of the Judson Mills there. This national title is bestowed annually by the National Retail Dry Goods Association. Mrs. Cox went to New York on her first airplane trip and was met at LaGuardia Field by various city officials. She was outfitted in a complete wardrobe by *Harper's Bazaar*, and later was a guest of the association at its annual meeting.

To Make Nylon Parachutes

Atlantic Rayon Corp., Providence, R. I., has formed a new company to manufacture Nylon parachutes. The company, known as the Atlantic Parachute Corp. is setting up a plant in property owned by Atlantic Rayon in Lowell, Mass. Arrangements have been made with the Pioneer Parachute Co., South Manchester, Conn., to give the new company the technical and engineering assistance necessary to organization. Atlantic Rayon Corp. owns 60% of the stock and Pioneer, 40%. Contracts for sewing machinery and other equipment have already been placed and key personnel for the new company are being picked out and are receiving preliminary training at Pioneer's plant.

Henderson Scores "Parity" in Price Bill

Leon Henderson, Price Administrator, when speaking at the fifteenth annual convention of the Wholesale Dry Goods Institute in New York on Jan. 21, scored the provisions of the then-pending price control bill which related to farm products and which barred ceilings on such prod-



The Ramparts We Watch

A soaring plane... a rumbling tank ... a mighty battleship ...

And back of these mighty weapons of War are MEN!

Men—to be clothed in olive drab or Navy blue. Men—to be kept warm with flannel shirts, thick wool socks and warm wool blankets. Men—to work in tropic heat in cool cotton ducks. Men—to float from the sky with parachutes of silk.

Textiles for Victory!

Mill men call it the biggest job the Textile Industry has ever been called upon to do. It demands all-out production from every machine to deliver all the clothing and supplies required by the Army and the Navy, plus the essential textiles needed by a free people fighting the battle of production.

It takes ceaseless watch over existing mechanical equipment to detect advanced symptoms of a let-down in speed or quality of production... to seize every opportunity to improve, repair and replace obsolete equipment.

These are the ramparts we watch!

Since 1820, we have developed and built machinery for the Wet End of Textile Finishing. Today, we are doing our utmost to furnish machinery to the Industry to meet its present need. Let our experience serve you.

H. W. BUTTERWORTH & SONS CO.
Main Office and Works, Philadelphia, Penna.
Offices in Providence, R. I. and Charlotte, N. C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

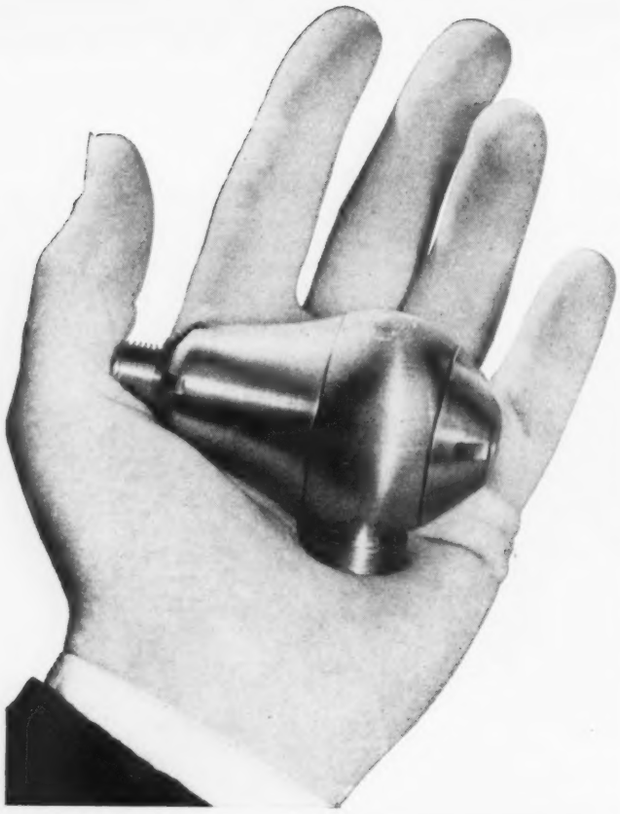
***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY



The Reliable Atomizer

Looks like a sweet potato partly for streamlining, so as not to catch lint; partly to make it *diaphragmatic.*

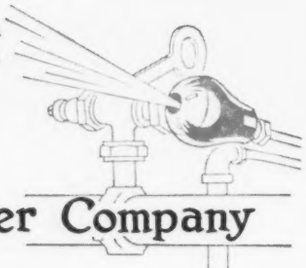
After hard and continuous mill service, orifices in the self cleaning

Parks Turbomatic Humidifier

still remain normal in size, shape, and alignment—also in action.

Rated conservatively. No double standards; one for our laboratory—one for your mill.

Interchangeable with earlier Turbo models.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

TEXTILE CALENDAR

Alumni Association of Philadelphia Textile School, annual banquet, Philadelphia, Pa., Feb. 20, 1942.

National Association of Wool Manufacturers, annual meeting, Hotel Commodore, New York, Mar. 4, 1942.

Textile Operating Executives of Georgia, spring meeting, Georgia Tech., Atlanta, Ga., Mar. 21, 1942.

Knitting Arts Exhibition, Atlantic City (N. J.) Auditorium, Apr. 27 to 30, 1942.

Textile School of N. C. State College, 15th annual style show, Raleigh, N. C., Apr. 30, 1942.

Chattanooga Yarn Association, annual outing Lookout Mountain Hotel, Chattanooga, Tenn., May 21 and 22, 1942.

Southern Textile Association, annual meeting, Blowing Rock, N. C., June 11 to 13, 1942.

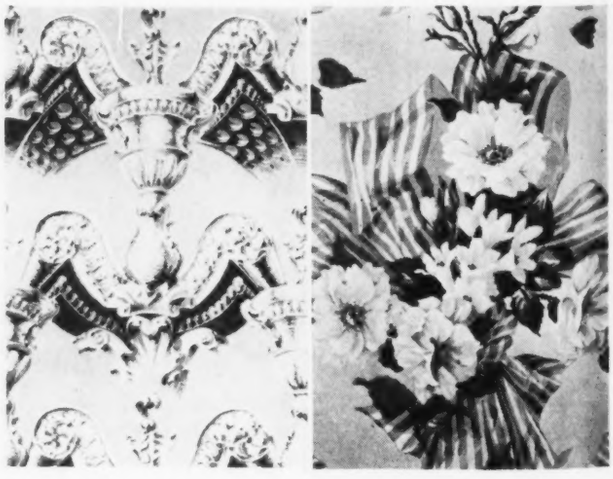
ucts less than 110% of parity. He pointed out that this provision was a strongly inflationary influence contrary to the original purpose of the bill. Since the date on which Mr. Henderson spoke, the bill has become a law and the provisions criticized have been retained. Mr. Henderson praised the dry goods trade for its good record in voluntary price discipline, but admitted there was grave difficulty ahead. He foresaw great shortages for civilians and great changes in the business world.

Carpet Men Hasten Change-Over to Duck

At a meeting of carpet mill men at the Institute of Carpet Manufacturers in New York, Feb. 3, plans were perfected to increase production of duck and other war materials (in anticipation of substantial Government orders), including exchange of technical information on the change-over of machinery. During the last war the industry made 100,000,000 yd. of duck and large quantities of blankets.

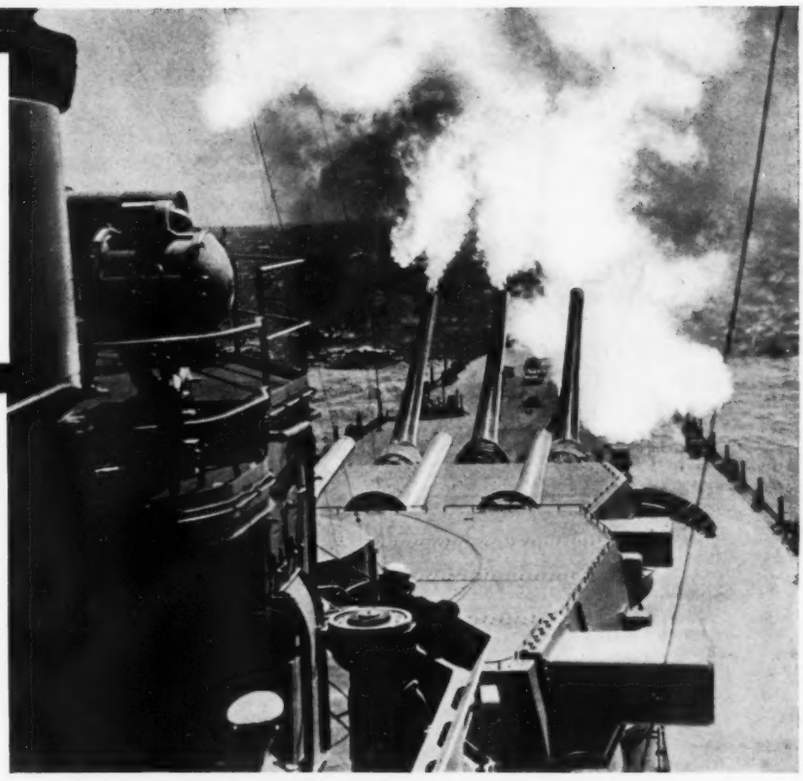
Plan Safety Convention

Hazards in the manufacture of war material that result in costly delays and bottlenecks in production will be highlighted throughout the 4-day annual Safety Convention and Exposition of the Greater New York Safety Council, to be held March 3 to 6 at the Pennsylvania Hotel, New York.



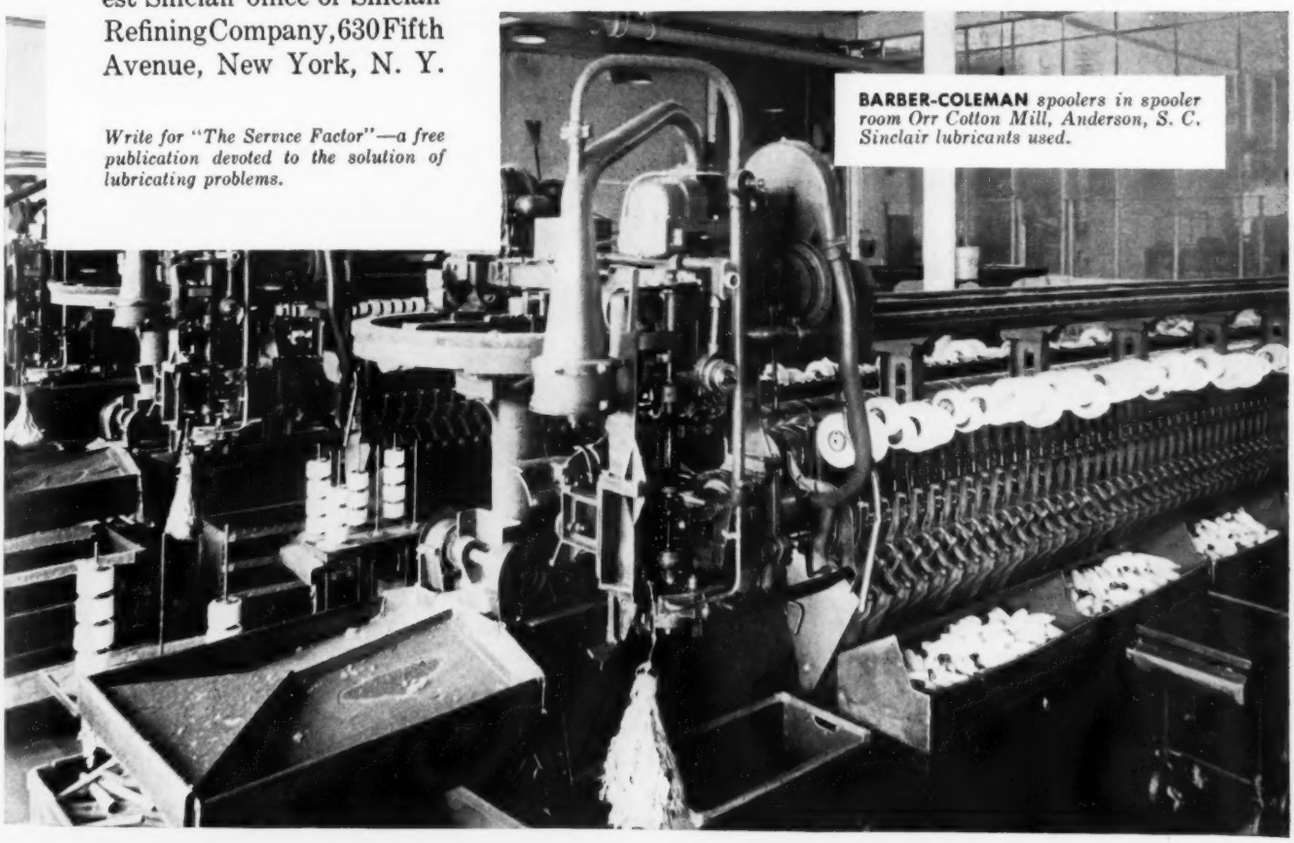
NEW PRINTS DESIGNED BY SCOTT WILSON run over a wide range of effects. Two are shown above. At left is an architectural print on 50 in. chintz offered by F. Schumacher & Co. The pattern is a wide color range. Retail price is $5. At right is a floral offered by Lawrence Fabrics Corp. on a rayon bengaline to retail at $2.50. Reproduction above is about 1/5th true size.

WAR PRODUCTION tolerates no slow-downs. Don't allow inadequate lubrication to reduce productive machine hours. For *TEXTILE MACHINERY* there are . . .



. . . SINCLAIR LILY WHITE OILS and NO-DRIP LUBRICANTS . . . oils for cool, no-drag, high speed spindle operation . . . lubricants with positive staying ability for top rolls. For complete information, or lubrication counsel, (including Knitting Machinery Oils) write nearest Sinclair office or Sinclair Refining Company, 630 Fifth Avenue, New York, N. Y.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.



BARBER-COLEMAN *spoolers in spooler room Orr Cotton Mill, Anderson, S. C. Sinclair lubricants used.*

SINCLAIR TEXTILE LUBRICANTS

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth

Just a few cents worth removes the starch from hundreds of yards of cotton and mixed cotton fabrics

Desize with EXSIZE

Exsize is a liquid concentrate of enzymes that removes starch gently and naturally. Because it is fast and thorough in action it reduces the amount of chemicals needed for bleaching and dyeing and permits this reduced quantity to be more efficient.

Exsize contains no chemicals or alkalis to injure the finest fabrics. For further, complete information send for FREE booklet —today!

PABST BREWERIES

Our laboratory facilities and practical field men are available to help you with desizing problems.

PABST SALES COMPANY

CHICAGO, ILLINOIS

•

Warehouses at New York,

and Textile Warehouse Co., Greenville, S. C.

WILBERFORCE, a creation of American Viscose Corp., is introduced to Walter Bluh (left) of Marvlo Fabrics, Inc., by William Stutts of American Viscose. This character is featured in the rayon company's forthcoming advertising of Crown Tested Rayon fabrics in men's wear items.

Color Changes in Cotton in Storage

Changes in color of raw cotton in storage are discussed in a recent report by Dorothy Nickerson, color technologist, Agricultural Marketing Service, U. S. Department of Agriculture. Replicate samples of six commercial varieties of cotton—first and second pickings of each—were distributed to 15 locations for office and warehouse storage. After two year's and five years' storage, each sample was measured for color, and all spots were counted and compared with marked photographs of the original samples. The color measurements showed that all samples increased in chroma (depth of yellowness) and lost a high percentage of their spots in storage. Except for one variety, change in chroma was not so great for the first two years of storage, but was quite significant for all varieties after five years. Samples stored at Galveston, Houston, and Mobile, showed more change than those stored at New Bedford, New York, Washington, El Paso, and San Pedro.

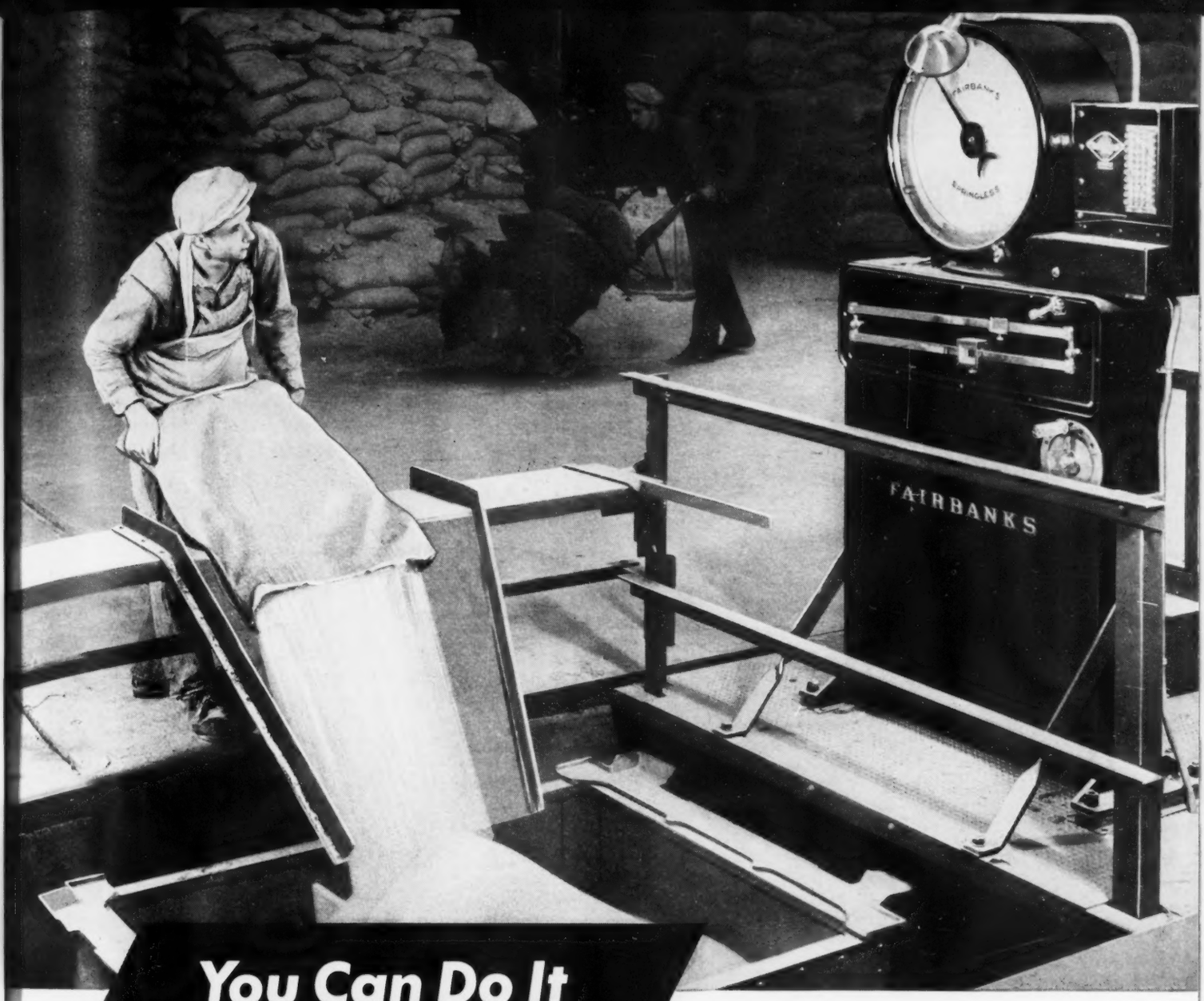
All cottons lost a high percentage of their spots in two years and gained a few during the next three years, but not enough to approach the number that each had at the beginning of the test. Change in number of spots seems to d pend more on the variety of cotton than on the location of storage.

"Forty Years of Building"

Under the above title Eavenson & Levering Co. announced their 40th anniversary in the current issue of their publication "Making the Grade With Wool." The two founders were the late J. Walter Levering, father of the present treasurer of the company and uncle of the present president, and Alban Eavenson. The latter is still active in the counsels of the company and is also prominently known for his participation in industry-wide research projects.

Voided by Wool Conservation Order

Dramatic reflection of the effect of the wool conservation order was seen in the following message overprinted in red on an advertisement by Chatham Mfg. Co. in a trade paper, immediately after the order was announced: "Void. As this advertisement was on the press, the Government issued Wool Conservation Order M-73 which cancels this planned line of Chatham blankets because of our Government contracts. We hope that a new list can be announced shortly."



To speed compounding of materials, this Fairbanks Dial Scale was built into a charging car which travels in a pit. At the touch of a button the Printomatic gives an accurate printed record of each batch.

You Can Do It FASTER with MODERN SCALES

• Rare is the weighing job which can't be done faster and more precisely with today's vastly improved scales. These scales *print* weight records more quickly than a man can read and write them. They *eliminate human errors.* They weigh while materials are *on the move.*

But—important as those advantages are—don't dismiss modern scales as nothing more than better weighing instruments. For scales have assumed amazing *extra* functions which often speed production surprisingly. They *count* small parts and products. They furnish weight records for accounting and inventory control. They weigh and disburse preset amounts *automatically,* and can keep ingredient proportions *secret!*

WE WANT TO HELP YOU

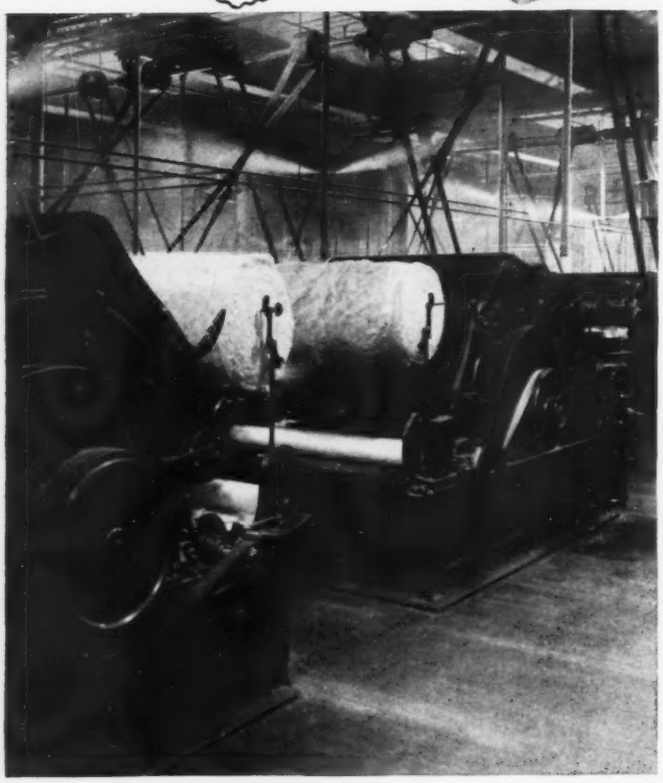
We are anxious to do everything we can to help speed American production. Possibly our scale engineers could suggest new and more efficient applications of scales in *your* plant, or modifications of your present scales to attune them to today's tempo. Write Fairbanks, Morse & Co., Dept. D209, 600 S. Michigan Ave., Chicago. Branches and service stations throughout the United States and Canada.

FAIRBANKS·MORSE SCALES

DIESEL ENGINES ELECTRICAL MACHINERY MAGNETOS RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
PUMPS MOTORS FAIRBANKS SCALES WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS

NO MORE Humidity Ups and Downs

AT GLENWOOD COTTON MILLS!



Wandering humidity is effectively curbed at the Glenwood Cotton Mills, Easley, S. C., by the installation of an Amco Humidification System.

Modern, self-cleaning Amco Atomizers deliver finely atomized spray without drip or feathering down. Self-cleaning of both air and water nozzles reduces maintenance to a minimum.

Amco Humidity Controls automatically hold humidification at the proper level for best work, within very close limits.

Inadequate or poorly regulated humidification may be causing you trouble – especially if you're working on Government-inspected war materials. So why don't you call an Amco Engineer to survey your plant humidification set-up at once! American Moistening Company, Providence, R. I. . . . Atlanta . . . Boston . . . Charlotte.

Amco HUMIDIFICATION

Lowell Textile May Run Night Courses

President Charles H. Eames of the Lowell (Mass.) Textile School has announced that if interest warrants, Defense Evening Courses covering 12 to 16 weeks will be started March 2, without tuition charges. Opportunity for registration and consultation with faculty members was scheduled for Feb. 4 at Lowell. The courses are planned to cover design, spinning and twisting, finishing and testing of textiles, woolen and worsted yarns, textile chemistry related to warfare, chemical warfare, advanced mathematics, elements of electricity, applied physics, machine shop practice, etc. Lowell's day school commencement will be held May 5 instead of June 9.

A.A.T.C.C. Notes

Use of sulphur dyes on Army fabrics was the chief topic of discussion at a recent meeting of the Piedmont Section of A.A.T.C.C., held at the Poinsett Hotel, Greenville, S. C. J. L. Crist, president of Southern Dyestuff Co., Charlotte, N. C., read the principal paper, and brief talks were made by Lieut. Col. L. O. Grice of the Standardization Division of the Quartermaster General's Office, Washington, and Major Frank Steadman, research officer of the Philadelphia Quartermaster Depot.

At the meeting of the New York Section, held Jan. 23, Howard D. Clayton, of Cluett Peabody & Co. discussed Sanforizing as applied to rayons, and O. F. Marks, of American Enka Corp. discussed shrinkage testing of woven rayon.

This and That

Brigadier General W. A. McCain, commanding officer of the Philadelphia Quartermaster Depot, was guest of honor of the Worth Street District at a dinner held in the Wool Club on Feb. 16 under the auspices of the Textile Square Club. Ross Cramer, of Carnac Cottons, Inc., was chairman of the dinner committee.

Cotton-textile production in 1941 set a new record figure of 11,898,000,000 sq. yd., according to the annual report of W. Ray Bell, president of Association of Cotton Textile Merchants.

Woolknit Fashions for spring were presented to 500 buyers, stylists, store executives and fashion press Jan. 7 in the ballroom of the Hotel Pierre at the cocktail hour. This was the fifth semi-annual fashion show presented to the trade by this group. The show was under the direction of June Hamilton Rhodes, who acted as commentator.

Men's wear fabrics were featured in a showing made last month under the auspices of Tennessee Eastman Corp. and A. M. Tenney Associates in New York. The display was designed to acquaint retailers and buyers of sportswear, furnishings, and clothing, as well as manufacturers, with the wide range of weaves, blends, colorings and finishes available in fabrics using all or part Eastman acetate rayon staple fiber or filament yarn.

Properties of Aralac were discussed by Francis C. Atwood, vice-president, Aralac, Inc., at a meeting of the Philadelphia Textile School Alumni in New York, held on Jan. 15.

The Army will occasionally buy fabric seconds under certain special conditions where the purchase will not interfere with the serviceability of garments to be made from this cloth, according to the War Department.

The entire production of Fortisan, the high-strength acetate rayon yarn developed by Celanese Corp. of America, has been pledged to the Government according to Dr. Camille Dreyfus, president of Celanese Corp. Fortisan is

WHICH WOULD YOU RATHER HAVE?

Which has the more substance—the doughnut or the waste part from the center?

The doughnut, of course.

LEIGHTON
OUTER DIAL

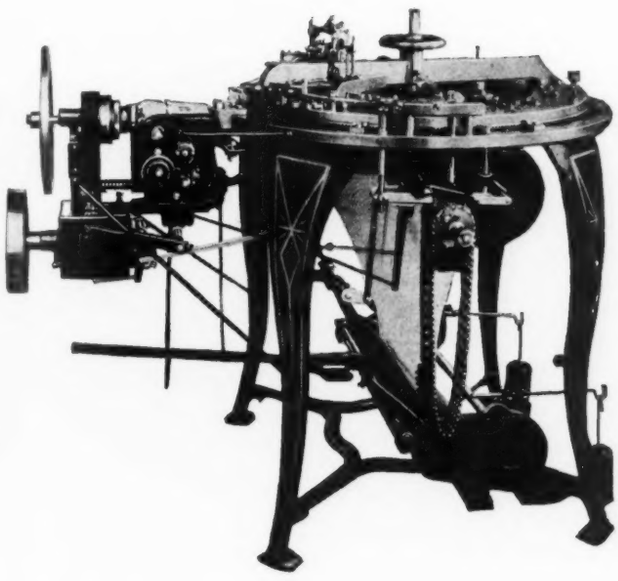
ORDINARY
INNER DIAL

So, and for the same reason, does the needle plate of Leighton rib machines have more substance than the needle dial of ordinary rib machines.

What does this mean to the knitting mill?
It means that the Leighton needle plate has more metal and hence *greater* strength for the lands that support the needles, a very important quality in fine-gauge machines.

More than that, the Leighton principle of operating the horizontal needles *inwardly* toward the cylinder permits the use of cams with easy bevels and the drawing of yarn into stitches with very little strain on the stock, each stitch being formed almost completely before a second stitch is drawn from the yarn. As a result, good fabrics can be knit from heavy or fine yarns on the same machine—an outstanding Leighton advantage.

Rely on Leightons, therefore, to produce superb and saleable Knitted Sportswear and other Outerwear Garments.



Leighton Machines are being used to secure Government Contracts for watch caps, sweaters, and other Army and Navy Garments.

69 Years' Experience

LEIGHTON
MACHINE COMPANY

MANCHESTER, NEW HAMPSHIRE

Est. 1873 **Inc. 1894**

The
STARCHES
You Need

for Every
Textile Purpose

- Pearl Corn Starch
- Thin-Boiling Corn Starches
  (all fluidities)
- Corn Dextrines
  (white and yellow types)
- Corn Gums
  (for printing and finishing)
- Fiberjel "V"
  (for Filament Viscose Sizing)
- Fiberjel "SR"
  (for Spun Rayon Sizing)

Our Textile Chemists can help you obtain the results you want. Their services are at your disposal.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

being used in making parachute and balloon cloth and for several other purposes.

Inventory of rayon filament yarn held by weavers of broad goods the end of December, 1941 totalled 23,300,000 lb. as compared to 21,900,000 lb. at the end of November, 1941, and 21,800,000 lb. on Oct. 31. Survey was made by National Rayon Weavers Association and National Federation of Textiles.

An advisory committee on dyes, composed of representatives of leading dye manufacturers, has been appointed recently by Textile Color Card Association. The group will guide the association's various color committees so that when seasonal colors are chosen, the association will be assured that the shades can be produced without affecting the Government's needs.

Civilian Supplies on Down Grade in Volume

Cotton goods buyers are finding that it is more and more difficult to obtain needed goods for civilian trade. Manufacturers are loath to do more than a piece-meal business because of increasing Government demand and controls. There have been numerous advances in price where same are not restricted by price ceilings, and users are making numerous substitutions where particularly wanted materials are no longer available.

Wool goods trade continues only so fast as sellers permit it to go. For the most part mills are offering only for nearby months and are controlling yardages so that all their various customers may each have a little. Reports from retail circles in January indicated a heavy buying wave. Clothiers however are not being stampeded. The "parity" provision written into the price control law has made some merchants expect higher wool prices and consequently higher fabric and clothing prices.

Rayon manufacturers, although chalking up new production records, are still unable to meet the demands put upon them. Allocation of 13,000,000 lb. of rayon for "Good Neighbor" export to Latin America has been made. This quantity will not supply all the South American needs and some form of rationing will have to be adopted. Possible restriction of Nylon to Government use will put further demands upon the rayon industry, particularly in the finer deniers.

Hosiery mills launched new lines of rayon full-fashioned goods last month at prices ranging from $5.25 to $8.25. Most of these numbers are of 75- and 100-denier rayon, specially treated to obtain greater elasticity and strength. The increasing restrictions on Nylon and the likelihood that no civilian Nylon would soon be available, threw the industry back upon rayon and cotton, and made it evident that sales of full-fashioned hosiery will be on an allotment basis since the amount of suitable yarn available seems quite inadequate.

Underwear mills are making offerings for the new fall season, but limiting them to the nearer deliveries. Already changes in constructions are evident, particularly in wool lines, resulting from restrictions on raw materials. Higher prices, due to higher raw materials and labor, have not repelled buyers. The 12-lb. staple ribbed union suit was quoted at $8.25 by a large southern mill. Men's 10-lb. shirts and drawers were priced at $6.

Outerwear for the new fall season has been offered, but there is a movement to take business only on a quarterly delivery basis. In some cases manufacturers are restricting buyers to 40% of what they ordered last season.

FULLITIN

For Perfect Fulling

★

1 Used with alkali only, it eliminates the lengthy soap boiling operation.

2 Used with soap it prevents congealing, eliminating stuck places, creases and whiplashes.

3 Permitting the use of stone cold soap it prevents the troubles that hot soap causes.

4 It quickly saponifies oil, grease and dirt.

Proud to be doing our Part

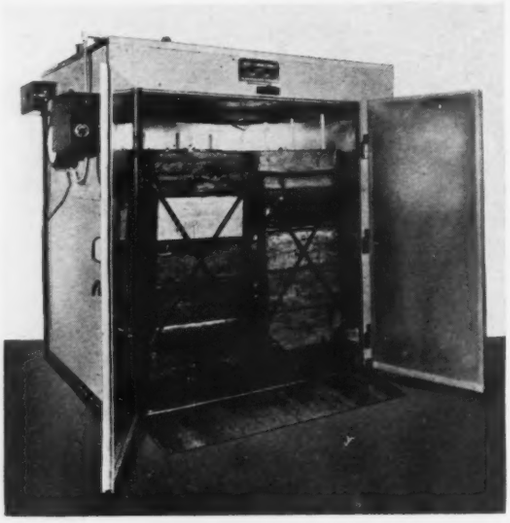
Our new plant at Memphis, Tennessee will produce large quantities of mustard gas protective for the U. S. Army.

★

It's the Finish that Counts

ERNST BISCHOFF CO., INC., IVORYTON, CONN.

FOUNDED 1908



COMPARATIVE

YARN-CONDITIONING

COSTS

Below are actual cost figures from a New England cotton mill comparing its old method of yarn conditioning with the modern "H-W" method.

BEFORE INSTALLATION OF "H-W" CONDITIONER

Steam consumption approximately 735 lbs. per hour at 56¢ per thousand times 78 hrs. equals	$31.92
5 hp. motor equals 3.73 kw. per hour at 1¢ times 78 hrs. equals	3.20
Total weekly cost	$35.12

AFTER INSTALLATION OF "H-W" CONDITIONER

Steam consumption 49 lbs. per hour times 78 hrs. equals 3,222 lbs. per week times 56¢ per thousand equals.	$2.13
1/3 hp. motor 250 w. times 78 hrs. equals 19.5 kw. at 1¢ equals	.20
Total weekly cost	$ 2.33
SAVING: Net weekly savings	$32.79

Since this machine cost only $1,755, IT PAID FOR ITSELF IN APPROXIMATELY ONE YEAR!

While the above is a typical case, costs vary in different mills and savings will vary accordingly. We have comparative figures from other mills which are available on request. Furthermore we shall be glad to estimate the savings possible in your own plant, without obligation!

"H-W" Conditioners and Twist Setters are applicable to all textile fibers—cotton, silk, Nylon, rayon, other synthetics, worsted, woolen, and all combination yarns.

THE INDUSTRIAL DRYER CORPORATION
STAMFORD, CONNECTICUT

News of Textile Bottle-Necks

Duck, burlap, Nylon, wool, all are serious choke-points.

YOU CAN'T PLAN a war, because the essence of war is surprise. The enemy's feints, and your own human vagaries conspire to produce one supply choke-point right after another. Newest of these, on the textile industry's doorstep, is burlap, and another not so new but still urgent, is duck.

Even though two-thirds of the burlap has been allocated to military use, leaving one-third for crop bagging, a huge gap remains to be filled, in so far as possible, by increased production of osnaburg.

Defense Supplies Corp., subsidiary of RFC, in cooperation with the new War Production Board, has worked out a program to purchase, through DSC's New York office, about 200,000,000 yd. of osnaburg, at prices not higher than the ceilings set by the Office of Price Administration.

Actual hostilities quickly boomed the need for war sandbags and camouflage cloth, in addition to already-swollen demand for wool and crop bags. Undoubtedly such bags are out-going under Lend-Lease allocations also. Osnaburg and burlap are practically interchangeable for all these purposes. Thus WPB and DSC are setting up a combination osnaburg-burlap plan which can be manipulated as demand requires.

Experts in the War and Navy Departments, and in the Department of Agriculture and other branches, are sitting up nights with this problem. We are trying to feed the world and ourselves out of crop bags. Cotton cotton-bale covers are drawing renewed interest. They are talking of baling wool instead of sacking it. More grain than ever before may be harvested this year in bulk containers. Much of the enormous demand is created by the new technique of covering whole airports and other areas with cloth, painted in camouflage designs and colors.

The idea is to get weaving mills to shift from other fabrics to osnaburgs, in cases where necessary to give them large enough orders so they can afford to do it. Some Government textile men thought of using heavy sheeting for bagging and other urgent war needs, but they found that not much sheeting could be taken away from other requirements, such as food bags.

For months now, following the Army's famous emergency on cotton twill, it has been going short on canvas of nearly all weights—and has even resorted to specifying heavy twills for tents. At last, after some resistance, the Navy, urged by OPM, consented to enter a joint Army-Maritime Commission-Navy-Marine Corps duck purchasing pool. Bids were called for, and recently offers of about 200,000,000 yd. were opened at the Jeffersonville Quartermaster Depot.

Then, about the same time came the War Production Board's move to take over most of the duck mills' output. This was necessary, so some members of the industry agreed, because a few producers insisted on taking care of their old customers too well.

Various guesses were made how the Government would move in; some of them had RFC building plants; some had WPB taking over managements. Actually, it was much simpler than that. Last Jan. 15, WPB had sent telegrams to a large group of textile mills producing cotton duck, and to dealers and jobbers, directing them to accept no contracts for duck that did not have a preference rating of A-1-j or higher. The purpose was to make available to the Services the entire production; no ratings high enough to compete against it were issued.

But WPB soon learned that some existing ratings lower than A-1-j, or which had no ratings, were being extended

PROCESSING COSTS FOR ARMY SOCKS CUT 33% TO 50%!

PROVE IT RIGHT IN YOUR OWN MILL!
Send for your local Colgate-Palmolive-Peet representative and have him arrange a demonstration.

New Colgate-Palmolive-Peet product and formula saves time, steam and labor ...gets big improvement in feel and odor of finished socks!

RECENT experience* has proved that it's not only possible to save money on the processing of cotton-wool socks for the Army and Navy, *but also to turn out a better product!*

A new C.P.P. product and formula, tested against previously accepted processing methods, shows a saving in detergent costs of 33% to 50%! Additional savings in time, steam, and labor resulted from rinsing changes! And yet, the handle and odor of socks processed actually showed a marked improvement!

Call in your local C.P.P. man today, and ask him to arrange a demonstration right in your own mill! You'll find it a convincing example of the way Colgate-Palmolive-Peet products and recommendations have helped manufacturers in all branches of the textile industry! Or, if you prefer, write to us direct. No obligation, of course!

**Case history.*

COLGATE-PALMOLIVE-PEET CO.

INDUSTRIAL DEPARTMENT, JERSEY CITY, N. J.

Makers of:

Arctic Syntex "M" Arctic Crystal Soap Flakes

Colgate TKS Soap Colgate Formula 10 Colgate Formula 25

"BLITZ" costs money. Some mills lose hundreds of dollars a year in repairs to doors, jambs and hinges on busy routes. Why let "Blitz" smash his way through your doors?

"DAWDLE" wastes time, opening and closing doors by hand. Or he may leave doors open, causing drafts, air-conditioning waste, or losses due to change in room humidity.

"Our Phantom Doorman is paying for itself through reduced steam heating cost," says Mr. V. Carlsen, Vice-President of The Aspinook Corporation, Jewett City, Conn. The picture shows "The Phantom Doorman" in operation in the Aspinook plant.

"The Phantom Doorman" is a "full-time" door opener — door closer, controlled by electric eye, ceiling or wall-type switch, or floor button. Existing compressed air systems may be used for power. *But doors are under control even when the air supply is off!* They may be opened manually and closed automatically just as any door equipped with a conventional door closer.

5 Operating Profits! Easy, Low-Cost Installation... Engineer-Contractors in Major Cities

Start now to save time, doors, heat, air-conditioning and workers' efficiency. See THOMAS' REGISTER, "Door Operators," for further details and list of engineer-contractors to help in service and installation. For free bulletin, address "The Phantom Doorman," Dept. 36, The Yale & Towne Mfg. Co., Stamford, Conn. Makers of the famous Yale Line of locks, hardware, pumps, hoists and industrial trucks.

"THE PHANTOM DOORMAN"

TRADE YALE MARK

ELECTRIC EYE CONTROLLED DOOR OPENER CLOSER

in the field, with higher ratings. On Jan. 31, WPB wired the same group of mills directing them to submit a complete list of orders for cotton duck covered by revised or new preference ratings since Jan. 15. The aim, of course, is to obtain all duck output for the Services by enforcing the A-1-j rating.

After much unofficial discussion, a textile advisory committee of Sidney Hillman's WPB Labor Division, came out with an official proposal to use displaced carpet workers and idle carpet looms for the manufacture of cotton duck and blankets. Textile advisers in Washington say that pile fabric looms can weave two strips of duck, minus the pile.

Disemployment of some of the carpet industry's 30,000 workers, and silencing of some of its looms, followed the then OPM's order reducing by 50% the use of new wool in civilian orders. At this writing, Hillman's sub-committee had recommended the immediate formation of a carpet industry committee to meet with the Labor Division on conversion problems; that carpet manufacture be certified as a distress industry to help avoid more unemployment; a survey of the carpet industry to determine its availability for war production; that, since the "cotton-textile mills are already overtaxed and incapable of producing all the requirements in their own field," no awards of contracts for duck shall go to such mills not heretofore engaged in its production.

Another textile product about to feel the grip of war, as this was written, was Nylon. There was no official action at the moment, but WPB admitted it was about to move, and probably will have done so as you read. Success of parachute attack is increasing, and the United States is buying vast numbers of chutes for Army, Navy, Marines, and for other countries. The stockpile of silk is not big enough, and Nylon is next choice for parachute fabrics. Probably no allocation order will be necessary, although one was being considered; control is easy where the entire output comes from one manufacturer—in this case, Du Pont. WPB told TEXTILE WORLD it had no figures on the volume of Nylon production, that poundage reports mean little because the dernier is changed. WPB said that production is limited by the amount of phenol Du Pont can get. Presumably Du Pont's phenol orders will carry a high rating, same as for parachutes.

The next step is, of course, that the mill consumers of Nylon yarn want their loss of material replaced by rayon. Their need is urgent. Meanwhile, woolen and worsted manufacturers are pressing WPB for rayon yarn and staple, and closed-down silk mills want it. The only conclusion in sight, observers said, was that rayon staple fiber allocation is not far ahead. Four percent of the total production of rayon mills, including present export, has been allocated to Latin American countries by WPB.

Concern about the wool supply increased as Axis submarines stepped up their drive against shipping on both our coasts—imperiling wool en route from Australia, South America and Africa. No curtailment of use was yet ordered, further than the existing 50% cut in civil worsteds, and 60% on woolens. But another cut in this allowance may be expected at any time. The men's clothing makers plan to save 25 to 30% of wool by taking away your spare pants; your vest, with the double-breasted suit; your pocket flaps and furbelows, not to mention setting you back to the peg-top style of the steam car era.

WPB on Feb. 10 took over all supplies of raw silk, already frozen for last six months; after Feb. 22 all deliveries must be made to Defense Supplies Corp. Another recent move was allocation of suitable rayon staple to wool manufacturers to replace wool. Schedule 95 of OPA on Feb. 5 set highest prices Oct. 1 to 15, 1941, as ceiling for manufacturers, wholesalers, and jobbers on Nylon hosiery, with retailers exempted. Protests resulted.

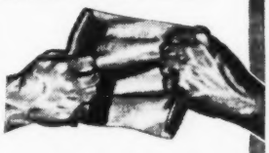
When U. S. Production Fights Its Battle at Sea

. . . FIBREEN protects the materials of war . . . *on deck and below* . . . against the hazards of transportation

FIBREEN is 6 ply: TWO layers of strong kraft, reenforced with TWO layers of crossed sisal fibers embedded in TWO layers of special asphalt—all combined under heat and pressure. FIBREEN is pliable and clean—will not scuff—stands an astonishing amount of abuse and exposure. Used either as a wrapping or lining material.

Soak it—twist it—try to tear it.

Only when you get a sample in your own hands can you realize that a *paper* can be so strong—so tough—and impervious to moisture. There is no other material like FIBREEN. In rolls and blankets of many widths.



A product of The Sisalkraft Co.—manufacturers of Sisalkraft, Sisal-X, Sisal-Tape and Copper-Armored Sisalkraft.

Long before shipments of war materials reach the front, they face the destructive onslaught of rain, waves, flying salt spray—possibly a dry, scorching sun—or snow and piercing cold. Protection against these hazards of transit is as necessary as armed protection against enemy submarines or bombers.

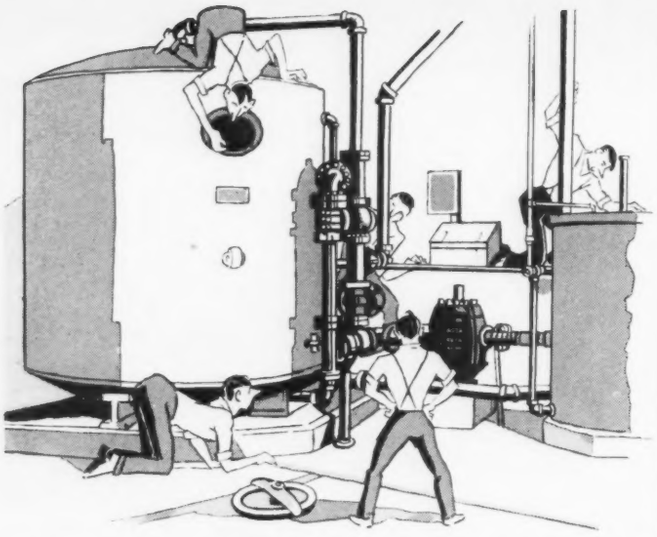
This protection must be made at the factory *in the shipping room*—and FIBREEN is recognized as one of the most effective, practical materials that can be used for protective packing. It is used as a liner for cases or as a tough, weatherproof wrapping. FIBREEN meets the most severe specifications and inspections. It's pliable, clean, inexpensive, is absolutely waterproof—amazingly strong, tough and durable.

Because of these qualities—and because of the vital importance of properly protecting the vast stores of war materials that pour from American production lines—finished goods, materials and supplies; as well as machines, tools or parts shipped from one plant to another—FIBREEN is now being allotted entirely to uses essential to the nation's war program.

Inquiry is invited from those industries that are in the "essential" classifications. Write, stating what you ship and how you now pack it.

THE SISALKRAFT CO.
205 W. WACKER DRIVE · CHICAGO, ILL.
NEW YORK · SAN FRANCISCO · LONDON · SYDNEY

SERVING INDUSTRY . . . . . CONSTRUCTION AND AGRICULTURE THROUGHOUT THE WORLD



Let's Look Into This!

If that Water Purification System of yours has to cope with today's stepped-up production schedules, *now* is the time to restore it to peak efficiency. New equipment purchases are difficult or impossible due to the preponderance of "defense" metals used in their construction. So to overcome this situation we offer all owners of water softening or filtering equipment . . .

Free Inspection

Free Check-Up Service

Upon request and without cost to you, our local representative will examine your equipment inside and out and give you a full report on its capacity, its mechanical condition and its present operating efficiency. You are not obligated in any way to purchase a dollar's worth of equipment or material even though his survey and recommendations result in definite operating economies. Cripples are a heavy expense . . . send for the "Doctor" today. Write . . .

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Mfgs. of Water Filters and Water Softeners

CLAYTON, NEW JERSEY

WATER PURIFICATION PLANTS

War Textiles Briefs

WASHINGTON, D. C.

Fine Cotton Gray Goods (Price Schedule No. 11) has been broadened to cover weaves not under the ceiling when sold in excess of 15,000 yd. in any calendar month.

Burlap allocation order (M-47) is amended to permit mills to process up to 10 unbroken bales out of own stocks.

Office of Price Administration was considering, at this writing, advisability of maximum prices for dry felt.

Production Requirements Plan: Producers operating under this plan have been forbidden to make use of any preference ratings except those assigned on PD-25A, except in case of AA ratings.

Price Schedule No. 58, Wool, Wool Tops, and Yarns, is amended to allow any changes in war-risk insurance or ocean freight rates from those that prevailed between Oct. 1 and Dec. 6, 1941, to be added to or deducted from the schedule's maximum prices.

Prices for wool yarns used in military fabrics are adjusted in an amendment to Price Schedule No. 58.

Specific maximum prices for domestic pulled wool are established in amendment No. 5 to Price Schedule No. 58.

Part-waste osnaburg ceiling prices are revised, and maximum prices are set for the first time over "clean" osnaburgs in an amendment to Schedule No. 35.

Wool rugs or carpets acquired since Jan. 2, 1942, may be resold at prices not exceeding those quoted by the manufacturer in his current price list to retailers, under an amendment to Price Schedule No. 65, trade discount being the distributor's margin.

Rayon Plants have been ordered to set aside for hosiery use 12% of irscose and 6% of acetate output.

Nylon for Civilian Use is offered by Du Pont since Feb. 11 only on spot if and when available, basis.

Expansion of the Army from 1,700,000 to 3,600,000 by the end of the year will require an additional 80% of materials used in equipment for officers and men, according to Secretary of War Stimson. QM has purchased material to equip an Army of two million.

Thomas W. Holland, wage-hour administrator, in response to requests for more 40-hour shift continuous plant operation, issued schedules designed to rotate four crews among the three 8-hour periods of the day and give every man a Sunday off at regular intervals.

Robert R. Guthrie, chief of Clothing and Leather Goods Branch, WPB, sent a letter to all rayon producers and jobbers instructing them to make available to their former customers a fair share of their yarn, to be based on customer's past purchases.

Men's and boys' clothing industry submitted to War Production Board recommended saving 25 to 30% in cloth, based on last year's production, by discontinuation of two-pants suits, (of 25,000,000 suits manufactured last year, 40% were two-pants suits, this saving making it possible to produce 17% more suits); elimination of vests on all double-breasted suits, estimated to save 4%; limit for length of coats to 29½ inches; eliminate patch pockets, inside bellows pockets, all belted models, cuffs and pleats on trousers; and limit overcoats to 43 in., now averaging 46 in.

A Cotton-Textile Industry Committee is in progress of appointment by Textile, Clothing & Leather Branch of WPB. It will be a representative group of cotton mill executives. About 10 technical subcommittees, representing different branches of the industry, also are being set up. Main object is to explore ways of increasing production of cotton goods.

every week is

COTTON WEEK

And, everyday, the cotton parade across the retail counters of the nation increases in volume, and in variety. The list of uses and of users grows and grows. No yarns linger on our shelves . . . demand is greatest for the fine mercerized yarns, versatile in beauty and knitting qualities, such as bear the Aberfoyle label. Indeed, sometimes we find ourselves unable to supply fully *all* needs. It's for lack of yarn, not for lack of trying; and, when your order has been delayed, we've been *very grateful* for your patience and cooperation.

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123 South Broad Street, Philadelphia, Pa.
—and in the South—
ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina
Representatives in principal textile centers of the world

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WEARTWIST, the Domestic Mercerized Lisle; DYED YARNS of every description; DURENE, 2-Ply Mercerized Cotton Yarn; COMETCORD, 4-Ply Mercerized Yarn for 6 x 3 Lines; S-P-Y, the Moisture-Resistant Mercerized Yarn; ENTWIST, Mercerized Cotton and Nylon Twisted Combination; NEOPHIL, Nylon Thread for Seaming and Looping Nylon Hosiery; PREFERRED Brand Seaming and Looping Thread.

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Get to know Industrial Steels, Inc., because we can supply stainless steel in any form for your COMPLETE installations in all textile processes. We have been serving the industry for some years and understand its particular requirements.

MANY textile men turn first to Industrial Steels, Inc., for the solution of their corrosion problems.

There is no longer any need of your scurrying around to obtain stainless pipe in one place, fittings in another, valves in another, etc., because Industrial Steels, Inc., carries complete stocks (yes, even today) of all sizes of stainless pipe, stainless fittings, stainless tubing, and stainless valves.

We also carry stainless bars, sheets, welding rod, castings, wire, angles, forgings, bolts, nuts, rivets, wood screws, and nails.

We suggest that you send for our list of stainless-steel stocks, the most complete in existence.

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FOR APPLICATIONS WHICH REQUIRE RESISTANCE TO HEAVY ABRASION.

INDUSTRIAL STEELS, INC.

"Pioneers in Stainless"

250 BENT STREET CAMBRIDGE, MASS.

Weaving the Cloth of Victory

Mill Girls of Britain Turn to War Work Not Forgetting the Extras!

By JOHN MARSH

THE WEST RIDING made Yorkshire one of the richest industrial regions in England, for here—amid the smoke from a thousand high chimneys in a score of little mill towns—is the cradle of the woolen industry. Mills are working overtime manufacturing khaki and blue for the armed forces, and uniform fabrics for thousands of civil defense workers.

When the Yorkshire mill-lass leaves home for work these winter mornings, the "black-out" is not yet over. The lights that used to stream from open doors and the twinkle of firelight behind kitchen windows, are absent.

The long cobbled streets are dark caverns leading to the darker bulk of the unlighted mill. The familiar "buzzer" no longer sounds, for now that laggard-speeder is silent for the duration except as a warning when enemy aircraft are in the vicinity. Two characteristics the war has not banished from Yorkshire are the clatter of clogs over cobbles and the laughing, good-natured voices of the mill-folk as they stream to work.

"A real cheery Yorkshire mill-lass is worth more than her weight in gold nowadays," a burly red-faced Yorkshire millowner told me. "At one time she turned up at six in the morning, and finished for the day at five."

He smiled proudly. "Now, she often works, without complaint, till seven and eight o'clock at night with all the extras thrown in!"

"Extras!" I hazarded.

"I suppose you've heard of A.R.P.?" he said dryly, a twinkle in his steel-blue eyes. "Nowadays, a Yorkshire millass has to help with the fire-watching, and that means taking her turn at staying all night in the mill in case of air raids. In addition she has to learn how to use a stirrup-pump, how to handle sandbags, scoop and shovel—in case of incendiaries—and often she takes a course of first-aid."

I walked round the mill with him. The weave-shed was working at full pressure. I was watching a white-haired old woman.

"Mrs. Wood is nearly 70," my guide told me in a mill whisper. "She retired nearly ten years ago. But when we advertised for old hands to return to work, she was the first to volunteer. And there isn't a better weaver in the whole place."

We inspected the underground air-raid shelter—designed to accommodate the mill's employees—then climbed to the roof where I sat, for a few moments, in the specially constructed eyrie in which the "spotter" takes up his position when the sirens sound.

I was at the door when the mill "loosed," as they say in Yorkshire. A crowd of laughing girls came, arm in arm, toward me. I waited to hear chatter of the cinema, of a dance. This is what I did hear:

"Don't forget the first-aid lecture at eight, Mabel!" one called.

"You're on duty at the wardens' post until midnight, aren't you, Bella?" someone else asked. "Yes," came the reply, "but Joe's fire-watching so we couldn't have gone anyway."

Then someone addressed the quietest member of the party. "What are you doing, Katie?"

Katie smiled shyly. "Oh, nothing much! Just knitting some socks for our Albert. He's coming home on leave next week so I want them to be ready for him to take back."

The dark bulk of the mill reared against the starlit sky. Behind the dead facade were men—and women—alert and watchful, ever ready to deal with "Fire-Bomb" Fritz if he should pass that way.

A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

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Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
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Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

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In the skillful hands of pioneer mothers and daughters, our textile industry had its humble beginning.

In step with textile progress during the last decade, the Denman and Terrell organizations pioneered in the development of quality fabric loom parts. Denman was the first to combine the toughness, resiliency and endurance that stands up under the tremendous strains of modern, high-speed looms.

And today there is no slackening in the zealous maintenance of the quality standards which have made DENMAN Fabric Loom Parts the first choice of textile leaders, everywhere.

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PICKERS • LUG STRAPS • HOLD UPS • ETC.

The **Terrell Machine Co.** *Inc.*

CHARLOTTE, N. C.

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James F. Notman, Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
Geo. Thomas & Co., Manchester, Eng.—European Agt.

Defense-Bond Honor to Botany

Textile mills play active part in drive for sale of Defense Bonds and Stamps

BOTANY WORSTED MILLS, Passaic, N. J., has been named by the Federal Reserve Bank as the first industry in the United States to act as an official issuing agent for defense bonds, John E. Manning, State Administrator of the New Jersey Defense Savings Staff, announced on Jan. 13. Botany shares the honor jointly with the American Telephone & Telegraph Co., the first issuing agent to be appointed in the public utility and finance division.

In making the announcement Mr. Manning declared that the Botany mills also had the honor of being the first industry in the country to establish a voluntary payroll subscription plan among employees, the plan having been put into effect by Col. C. F. H. Johnson, president of the company, on June 26, 1941, at the request of the Treasury.

Col. Johnson reported that the voluntary subscription plan was approximately 98% effective in the mills and represented total subscriptions exceeding $300,000. Purchases of more than $500,000 are anticipated before September of this year.

A large proportion of the defense bonds being sold are in small denominations, Col. Johnson explained. The result has been that the Passaic Post Office, the issuing agent in Passaic, has been overwhelmed with the detail work necessary to make delivery of the bonds.

"When I notified the Federal Reserve Bank that we would be willing to set up our own organization to handle the matter," said Col. Johnson, "we were informed that ours was the first such application from industry and was the first to which such authorization would be given. We believe that the establishment of an issuing agency in industrial plants is of great benefit to the Government, because it relieves local post offices of a tremendous burden of detailed accounting they are not equipped to handle, and because it will stimulate and increase the sales of defense bonds.

"Botany employees will buy a minimum of $500,000 worth of defense bonds by Sept. 1 next. Our subscription plan is a permanent and continuous one. As soon as employees complete payment on one bond, we automatically make deductions toward the payment for another one, unless otherwise instructed."

Mr. Manning declared that numerous other New Jersey industries had made application to be named as issuing agents.

* * *

A representative group of hosiery executives in New York has formed the Hosiery Defense Bonds Committee for Greater New York to stimulate the purchase of such bonds by employees of the industry.

* * *

Southern Combed Yarn Spinners Association, through its weekly bulletin, urged members to enlist their employees in the payroll-plan purchase of defense bonds.

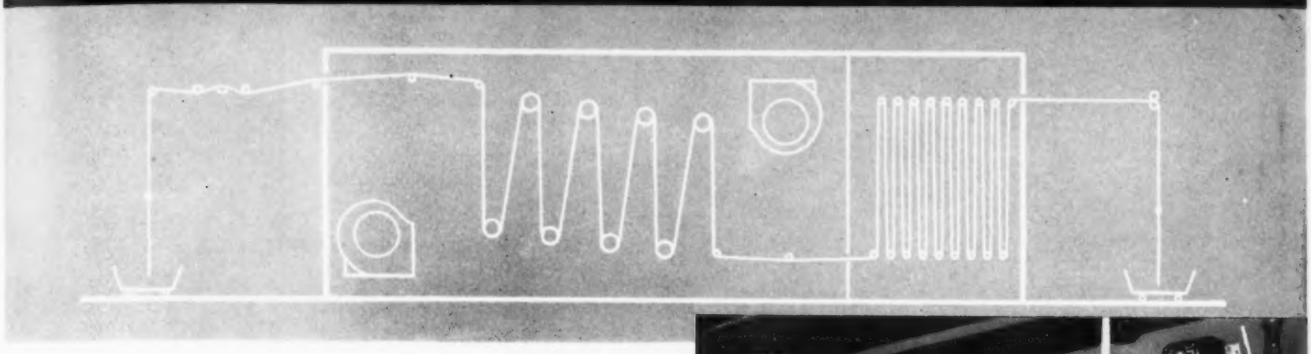
* * *

James H. Chapman, president of Inman (S. C.) Mills and of Riverdale Mills at Enoree, S. C., reports that employees of the two plants, totaling about 850, have subscribed 100% to a plan for purchasing defense bonds.

* * *

Latest additions to the Government's Honor Roll in connection with purchases of Defense Bonds by payroll method, include Arnco Mills, Newnan, Ga.; Fitzgerald (Ga.) Cotton Mills; Harriet & Henderson Mills, Henderson, N. C.; Pepperell Mfg. Co., Lindale, Ga.; American Viscose Corp. (all plants); Avondale Mills of Alabama.

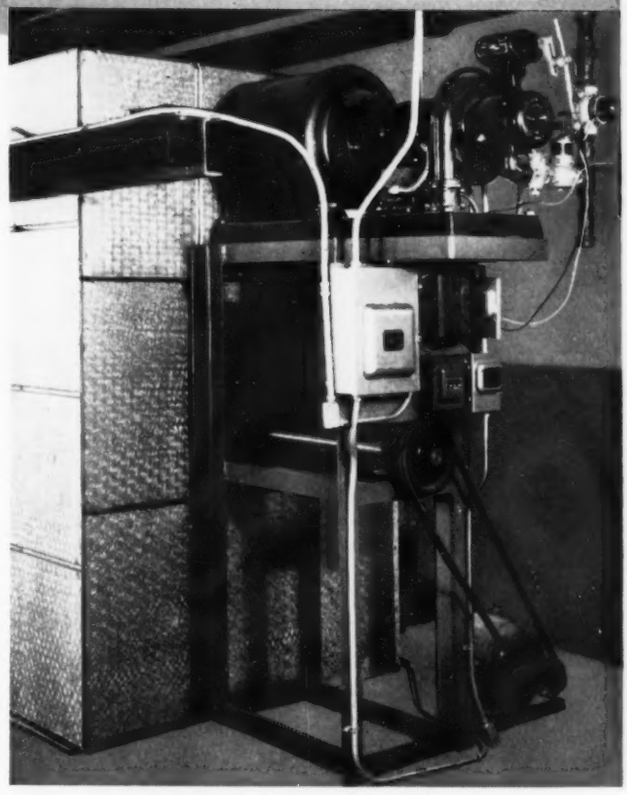
NEW A&G GAS HEATED DRYER FOR ZELAN FINISHES . . . A SMALL, HIGH SPEED, SIMPLE, LOW COST UNIT



This machine supplements our regular line of dryers (for curing Zelan or similar finishes) which operate with high pressure steam. It is a gas heated job, using for fuel either natural or manufactured gas of any type, and meets the demand for a small, high speed, simple and comparatively low cost unit. A temperature of approximately 400 degrees is obtainable with this dryer.

The gas is burned in a combustion chamber inside the dryer housing. The hot air produced in this way is blown by a fan into metal ducts which are designed to distribute it with maximum efficiency on to the goods. The general arrangement of the dryer is about as shown in the above diagram.

The machine is automatically controlled and has the usual gas protective devices to meet underwriters' requirements.



CONTROLS AND FAN DRIVE

Further information regarding this and other types of dryers for "permanent" finishes will be furnished on request. We are pioneers in this field.

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A 30-second Statement About Alkalies That May Put You Years Ahead in an Important Phase of Operation

ALKALIES are not just something to be taken for granted—*not any more.*

There are new developments in the use of alkalies that have an important bearing on processing methods in your industry — that affect definitely your ability to keep ahead of competition.

Solvay is in the forefront of this new activity, offering a technical service recognized as outstanding in the field.

Solvay technologists have not only done much of the research, they are also applying these findings in textile plants throughout the country.

We would be glad to give you full details on these new alkali developments. No obligations involved. Write or wire the nearest Solvay office.

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NEWS ABOUT MEN

J. A. Cooper, secretary of the Henderson (N. C.) Cotton Mills for many years, has been elected president, succeeding his brother, **S. P. Cooper,** who has been president since the death of their father, the late D. Y. Cooper, Dec. 20, 1920. **S. P. Cooper** is retained in an advisory capacity.

R. L. Harris, lieutenant-governor of North Carolina, for many years secretary-treasurer Roxboro (N. C.) Cotton Mills, has been elected president to succeed the late J. A. Long, Sr. **W. D. Merritt,** of Roxboro, was re-elected vice-president. Mr. Harris will still act as treasurer.

John P. Stevens, Jr., for the last 12 years vice-president of J. P. Stevens & Co., New York, has been elected president succeeding **Robert T. Stevens** who has resigned on being called into active service as a colonel in the U. S. Army QM. **Thomas W. Estes** has been elected a vice-president.

Thomas Talbot Clark, president of Talbot Mills, North Billerica, Mass., and **Arthur B. Otto,** president of Jonathan Ring & Co., Philadelphia, Pa., have been appointed to the National Panel of Arbitrators of the American Arbitration Association by Cornelius Vanderbilt Whitney, president of the association. Mr. Clark and Mr. Otto are both members of the National Association of Wool Manufacturers. They have made themselves available as impartial arbiters in connection with commercial or industrial disputes.

J. L. Riegel, of White Plains, N. Y., president of Riegel Paper Co., has been elected president of the Riegel textile interests, including Ware Shoals (S. C.) Mfg. Co., Trion (Ga.) Co., and Riegel Textile Corp., New York. He succeeds the late Benjamin D. Riegel.

Earle E. West has been elected secretary of the Underwear Institute, New York. He has been assistant secretary for some time.

Lauren K. Hagaman of Chas. P. Cochrane Co., New York, has been elected president of the Floor Covering Advertising Club. He succeeds **Howard Hildreth** of Mohawk Carpet Mills.

T. S. Dixon, Vancouver, B. C., senior executive of Gault Bros. Ltd., has been appointed representative in British Columbia for the textile and clothing administration of the Wartime Prices & Trade Board. Board.

EARL CONSTANTINE, president of the National Association of Hosiery Manufacturers, celebrated his tenth anniversary with that association at the time of the Hosiery Conference in New York last month, reported elsewhere in this issue.

Donald Comer, chairman of board of Avondale Mills, Birmingham, Ala., has been appointed by the Federal Reserve Board as branch director for the Birmingham bank for a term of three years.

John J. Quinn, Jr., president of Swift River Woolen Co., Stafford Springs, Conn., and Westerly, R. I., has been knighted by Pope Pius XII and received into the Sovereign Military Order of Malta.

Carl A. Rudisill, president of Nuway Spinning Co., and Carlton Yarn Mills, Cherryville, N. C., with his family, has presented $30,000 to Lenoir-Rhyne College, Hickory, N. C., to erect a library.

T. M. Forbes, executive secretary of the Cotton Manufacturers' Association of Georgia, Atlanta, Ga., who was recently appointed tire rationer for Georgia, has also been appointed by the WPB an automobile rationer for the State.

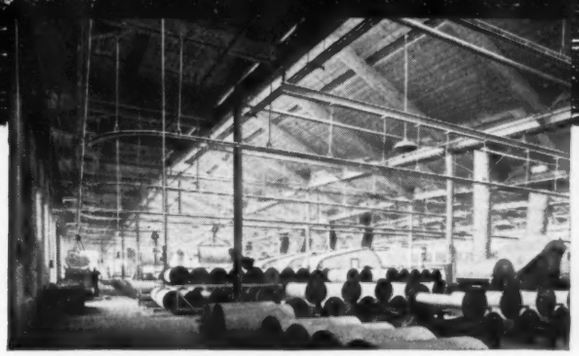
David Freedman has accepted an appointment with the War Department as a textile inspector. He was formerly in the styling department of L. Bachmann & Co. Recently he was service manager of the Textile Testing and Research Laboratories, New York.

R. A. Field, Jr., formerly superintendent of Newnan (Ga.) Cotton Mills, and more recently with Riverside & Dan River Cotton Mills, Danville, Va., has accepted the position of regional inspector of textiles for the treasury department at Washington, D. C. With head-

The Keynote of Manufacturing Today is EFFICIENCY

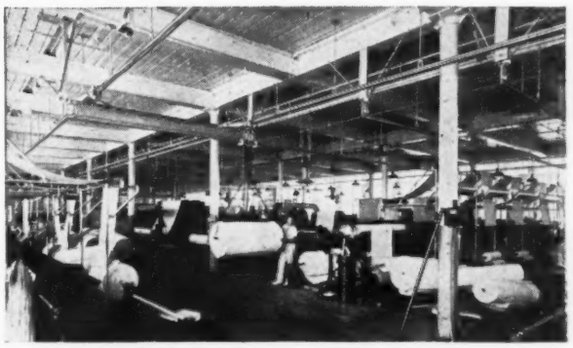
AMERICAN MONORAIL

OVERHEAD HANDLING EQUIPMENT



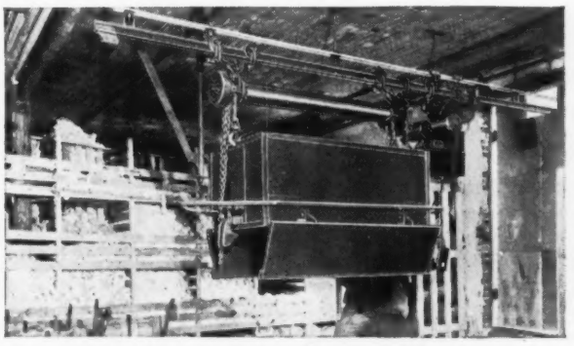
★ Overhead handling in the slasher room pays big dividends in time saved.

WASTE is out . . . in time, materials and man power. American MonoRail Overhead Handling Equipment has proven to hundreds of manufacturers to be the real answer to materials handling efficiency. Regardless of the type of business, there is a system suited to your problems. If you have a difficult or a costly handling operation, why not let an American MonoRail Engineer suggest a solution. Many times our engineers have solved problems that others claim "can't be done." Definite recommendations will be made and a detailed plan submitted showing just how an American MonoRail system can carry your product at the lowest possible cost and the highest possible efficiency. This service is without cost or obligation. Write us today.



★ Rolls of cloth pass from finishing to inspection without re-handling.

Write for copy of "Blue Book" showing hundreds of illustrations.



★ Automatic carrier transfers grey stock between mill and storage.

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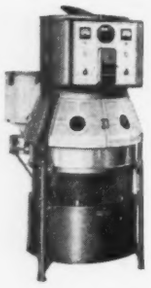
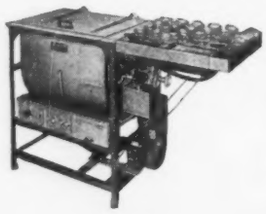
How we hate that word ERSATZ

But substitutes don't worry Atlas Ometer users.



ATLAS FADE-OMETER is accepted as the standard testing instrument for predetermining light fastness of textiles and colors. Should be used in complying with Federal and A. A. T. C. C. specifications.



ATLAS LAUNDER-OMETER is the official laboratory washing machine of the A. A. T. C. C. Quickly shows the effects of soaps and other detergents on colors and fabrics.

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Faster Skein Reeling plus Savings with FIDELITY TWIN-UNIT SYSTEM

Five Outstanding Advantages:

1. Easier, lighter work for operator—no high lifting.
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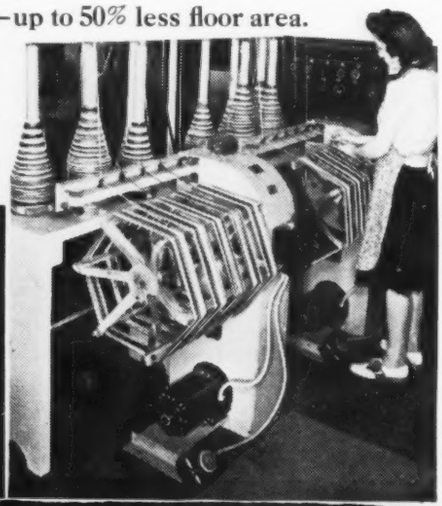
3. Close control of skein weight and yardage.
4. Greater flexibility for changes in production, dye lots, yarns, etc.
5. Space saving—up to 50% less floor area.

These five and ten more advantages described in Bulletin 3909 on FIDELITY Skein Reeling Machines. Write for it.



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NEWS ABOUT MEN

quarters in Atlanta, Ga., he will cover the fifth region, consisting of the two Carolinas, Georgia and Florida.

David L. McKee, Memphis, Tenn., an authority on cotton linters, has been appointed consultant to the cellulose unit of the Chemicals Branch of the WPB, Washington.

J. Ward Proctor, for many years with Wellington Sears Co., New York, has been appointed consultant on cotton duck to the Textile Branch of WPB, Washington.

Thomas H. McKinney, Sr., of Eustis, Fla., has been appointed consultant on cotton yarns to the Textiles Branch of WPB, Washington.

Ames Stevens, treasurer of Ames Worsted Co., Lowell, Mass., and an officer of several other textile companies, has been appointed consultant on wool fabrics in the Textile Branch of WPB. **John E. Bromley** of John Bromley & Sons, Philadelphia, has been named consultant on lace and embroidery. **Arnold L. Lippert** of Joseph Bancroft & Sons, Wilmington, Del., has been named consultant on dyes.

W. R. MacIntyre, Joseph Bancroft & Sons Co., Wilmington, Del., has been elected president of the National Association of Textile Finishers; **R. W. Arrington** of Union Bleachery, Greenville, S. C., and **L. H. Ballou,** Slatersville (R. I.) Finishing Co., are vice-presidents; **Alice C. Moore,** New York, was reelected secretary-treasurer.

James A. Holt was elected president of the Chicago Yarn Men's Club on Feb. 2. **C. Walter Seidel** was elected vice-president; **Fred W. Frank,** treasurer, and **George T. Hutchinson,** secretary. This is the 21st year of the existence of the club.

Arthur Coe, of U. S. Testing Co., has been elected president of the New York chapter of the New Bedford Textile School Aluminum Association. Other officers elected include: Vice-president, **James Hollas,** Scheuer & Co.; secretary, **Arthur Roane,** Celanese Corp.; treasurer, **James T. McLaughlin,** Seneca Textiles, Inc.

W. L. Balthis has been elected vice-president of Trenton Cotton Mills and Dixon Mills, Inc., both of Gastonia, N. C., succeeding the late Robert R. Ray.

Henry C. Neren, for the last three years general plant manager of American Viscose Corp., and for 21 years prior to that manager of the company's Roanoke, Va., plant, retired Jan. 31. He is succeeded by **George M. Allen,** formerly assistant general plant manager. Mr. Neren will continue as vice-president of the corporation and as a member of the board of directors. Mr. Neren has been identified with the rayon industry for 38 years, having joined Courtaulds, Ltd., in England in 1903, and coming to the United States in 1915 as a member of the staff of the American Viscose Corp's plant at Marcus Hook, Pa.

EDWARD J. McMILLAN, president of Standard Mills, Knoxville, Tenn., former head of Underwear Institute and long active in Southern textile circles, now one of employer members of the National War Labor Board.

J. A. Aycock has become general manager of Mandeville Mills, Carrollton, Ga.

John F. Glennon has been appointed manager of Quissett Mills, New Bedford, Mass. **George H. Smith** has been named assistant treasurer.

Alfred Pate has become general superintendent of

DR. GEORGE W. TAYLOR, former impartial chairman of union branch of hosiery industry, author of several books on hosiery labor, and member of research department, Wharton School of Finance, University of Pennsylvania, representing the public on the National War Labor Board.

Modern Textile Machinery NEEDS This Modern Material!

1 LIGHTER THAN ALUMINUM

2 NON-POROUS—EASILY CLEANED

3 NON-METALLIC AND RESILIENT

4 CHEMICALLY INERT

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FORMICA possesses an unusual combination of qualities that adapt it to many uses in the textile industry and has led to its employment in much recently designed textile machinery.

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It is hard, smooth, light in weight, non-porous and non-corrosive. It is easily kept clean, doesn't snag, and stands up under years of hard wear.

We shall be glad to send you data on the various grades with tables of engineering test results.

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Engineered Specialties Formica is interested in developing special products for the textile industry which may require some research and engineering work. If you have an idea for the use of the material in special textile parts we will be glad to co-operate.

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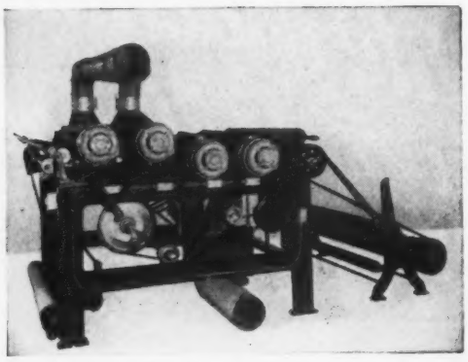

TYPE CMR AUTOMATIC SHEAR

for Cottons, Rayons, Spun Rayons and Silks

- Patented Automatic Seam Protector
- Built-in Motors for the Cutters
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- Adjustable Selvage, Cones, etc., etc.
- Improved Lubrication for Cutting Edges.

Send for our new CATALOG NO. 7 showing COTTON and RAYON MACHINERY

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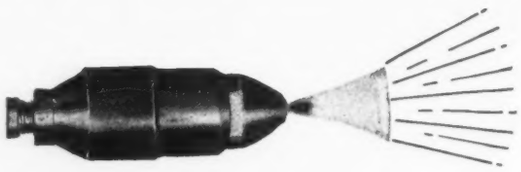


The Rihco Type B Atomizer

Today, the goal of every mill is maximum production with lowest waste. Material must be conserved, schedules maintained with highest efficiency.

A Rihco system of Type B atomizers boosts production, gives just the right humidity conditions, and does this at lower cost than ever before, because the Rihco principle of operation is based on a different way of vaporizing water, a way that requires far less air, far less initial equipment to obtain the same results.

R. I. Humidifier & Vent. Co.

Humidifiers Since 1912

99 CHAUNCY ST., BOSTON, MASS.

Aldrich Machine Works, Greenwood, S. C.
V. L. Sanderson, 1710 Walnut St., Philadelphia, Pa.

THEODORE WOOD (center), merchandise director of American Bemberg Corp., receiving the award for supplying authenticated information to the consumer by the Fact Finding Judge and Jury. Presentation is by Mrs. Charles Gregory. B. T. Dunlap, vice-president of Bemberg is on the right. Last year six million dresses made from one fabric in the certified plan were distributed without a single consumer complaint.

Stonewall (Miss.) Cotton Mills.

John W. Nickerson, general superintendent, Cheney Bros., Manchester, Conn., has been appointed chief of the Industry Section of the Labor Relations Branch of the War Production Board.

Camille Anderson, 22, of Memphis, Tenn. was selected on Feb. 7 at Memphis, as 1942 maid of cotton.

C. Herbert McDowell, Scotland Neck, N. C., connected with the Halifax Cotton Hosiery Mills since 1898, has retired as vice-president and sales manager. He will still act in an advisory capacity.

Andrew W. Macy has been made treasurer of Nashawena Mills, New Bedford, Mass. He succeeds **J. Earle Parker,** who served temporarily after the death of William B. Gardner.

A. L. Brown, vice-president and general manager of Cannon Mills, has been elected "man-of-the-year" at Kannapolis, N. C., for 1941.

J. R. Newell is the newly-elected treasurer of Mandeville Mills, Carrollton, Ga.

Arthur Measures, treasurer of the Clark Thread Co., New York, has retired after 55 years in the thread business. His career began in England in 1887. He came to this country in 1894 and joined Clark in 1916.

Benjamin D. Glenn, vice-president of Erwin Yarn Co., New York, and with the company for 23 years, has resigned.

Harry L. Dalton, southern manager and a director of the American Viscose Corp., with headquarters in Charlotte, N. C., has been elected to the board of Wachovia Bank & Trust Co.

Frederick H. McDevitt has been appointed general manager of Pierce Bros., Ltd., New Bedford, Mass. Until a year ago, Mr. McDevitt had been agent of the Soule Mill, New Bedford, for 25 years, previous to which he was superintendent of Maverick Mills, East Boston.

Raymond G. Bieghler is now assistant secretary in charge of new business with Standard Factors Corp., New York.

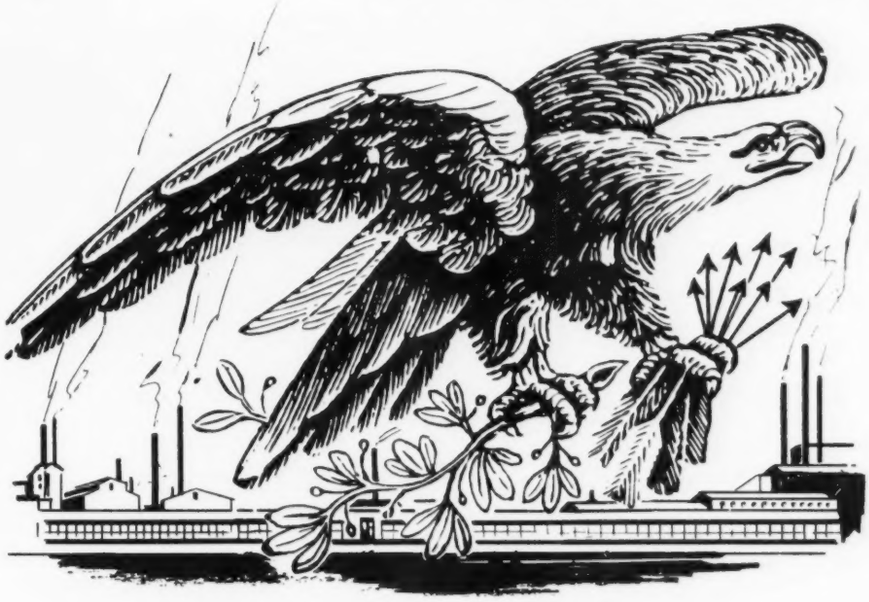
George W. Henderson, lately with the Trust Co. of Georgia, Atlanta, has become associated with Dana Martin Co., yarns, New York. He was recently made an honorary member of the Atlanta Textile Club.

Harold E. Emrich of Joshua L. Baily & Co., New York, has been elected president of the Textile Credit Associates.

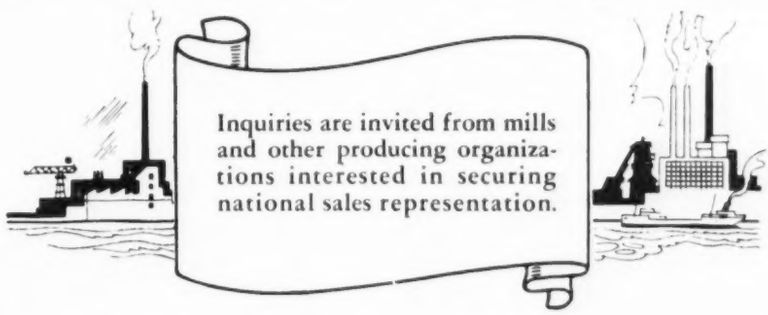
James Q. Purcell has be-

MAJOR DOUGLAS HALLAM, D.S.C., secretary of the Canadian Woolen & Knit Goods Mfrs. Assn., of Toronto, who addressed the recent Hosiery Conference in New York. He is also secretary of the Cotton Institute of Canada, the Silk Assn. of Canada, and the Primary Textiles Institute.

An industry comes through



Long years of curtailed consumption have in no wise impaired the production capacity and efficiency of the cotton-textile industry. This is a tribute to the far sighted policy of the leaders. A demand of unprecedented proportions is being met with the irreducible minimum of dislocation and disappointment. The industry is endeavoring to fulfill its two-fold responsibility of supplying both defense needs and domestic needs. Equally important, today's entire operation is being conducted in such a manner as to be prepared for whatever follows this acute stage of national emergency.


Inquiries are invited from mills and other producing organizations interested in securing national sales representation.

CONE EXPORT & COMMISSION CO.

59 Worth Street — New York, N.Y.

SEAL OF CONE FABRICS SERVICE

The New Stokes Fibre Cutter

•

Makes 500 to 20,000 knife cuts per minute

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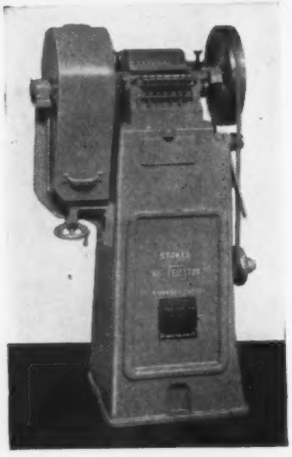
Handles 4 to 8 tops, or equivalent, simultaneously



Model 72 E is an improved machine, more productive and economical, for cutting rayon, wool, cotton, silk, flax and other fibres, wet or dry.

Choice of four rotary cutter heads, readily interchangeable, produces a full range of fibres, from flock to 8" lengths.

Variable speed drive with synchronized feed is instantly adjusted while operating, for length of cut desired or type of material.

Features include Self-sharpening Knives; Tension Release for feed; Clutch for quickly stopping feed rolls; Balanced Heavy-duty Cutters, ball bearing mounted; many other improvements.

Write for Bulletin 42 FC.

F. J. STOKES MACHINE COMPANY

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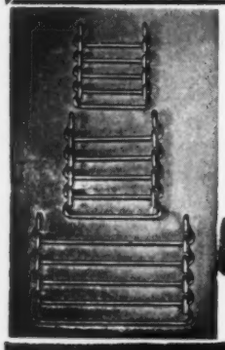
OPPORTUNITIES
TO IMPROVE YOUR PRODUCT AND SAVE YOUR MONEY . . .



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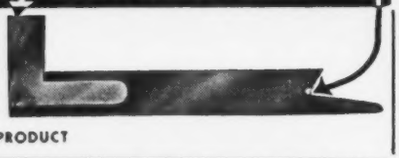
Accurately made from high grade material—built to last and to hold its shape.

SINKER HEAD SLOT CUTTERS

The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

Send for bulletin giving full details on these and other products.

THE SINKER WITH THE HARDENED THROAT PATENTED AND THE HARD BUTT



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LESS BREAKAGE
LONGER SERVICE
LOWER OPERATING COST
LONGER UNIFORMITY OF PRODUCT

THOMAS & SKINNER STEEL PRODUCTS COMPANY

1119 East 23rd Street Indianapolis, Indiana

NEWS ABOUT MEN

come a partner in Woodward Baldwin & Co., New York. He has specialized for many years in rayon gray cloths.

Samuel Hanson, since 1912 manager of the mills of A. & M. Karagheusian, Inc., Freehold, N. J., retired as of Feb. 1. **W. C. Bufton,** assistant manager, succeeds him.

M. P. Epstein, merchandise manager of Industrial Rayon Corp., spoke at the regular meeting of the Textile Designers, Analysts and Technicians Association on Jan. 10 at the New Bedford (Mass.) Hotel. **Leo P. Chabot,** of Pepperell Mfg. Co., Fall River, president of the association, presided. **G. I. Rounds** of the Providence office and **C. R. Martin** of the New York office of Industrial Rayon Corp., were also present. At the next meeting of the association to be held in Fall River, March 14, **Fred Beardsworth,** head of the Weaving Department of New Bedford Textile School, will speak.

W. W. Crews, of Avondale Mills, has been elected president of the Chattanooga (Tenn.) Yarn Association, succeeding **George S. Johnston** of Textiles, Inc. **Fred K. Johnston, Jr.,** of North American Rayon Corp., is now vice-president, and **Henry Crumbliss,** of Cannon Mills, sect.

W. A. L. Sibley, vice-president and general manager of Ware Shoals (S. C.) Mfg. Co., resigned to become vice-president and treasurer of the Monarch group of mills, Union, S. C., effective Feb. 16.

Herman DeVries, assistant secretary and office manager of Fontaine Converting Works, Martinsville, Va., has resigned to join the Hohokus (N. J.) Bleachery. **Benjamin D. Whitlow,** head of the clerical staff, has succeeded Mr. DeVries.

HARRY KRATZER, special representative in eastern area for Rollins Hosiery Mills, Des Moines, Iowa, as noted in these columns last month.

George Moeller has become general salesmanager of the newly formed Manchester (N. H.) Hosiery Mills, an outgrowth of Massachusetts Knitting Mills with which he was connected for many years.

G. B. Toney has become night overseer of weaving at Dallas (Tex.) Cotton Mills.

W. Neil Pharr became superintendent of Erwin Mills 2 and 5, Erwin, N. C., on Jan. 15. He was at one time with Hartsell Mill, Concord, N. C., and later with Patterson Mills and Roanoke Mills, Roanoke Rapids, N. C. For the last two years he has been a representative of the Carolina Supply Co., Greenville, S. C. **W. H. Miley,** formerly superintendent of No. 2 Mill, has been made general superintendent of Nos. 2 and 5, both superintendents working under **E. H. Bost,** manager of 2 and 5 Mills, and **W. H. Muse, Jr.,** assistant manager.

CHARLES H. SILVER (right), general sales manager of American Woolen Co., New York, who headed the textile group in the "Fight Infantile Paralysis" campaign for 1942 in New York. At left is Keith Morgan of the Committee for the Celebration of the President's Birthday, and at center is Albert Goldman, New York postmaster who is receiving his certificate as head of the Federal employees division in the fund-raising drive.

Southeastern Cottons offers both Government agencies and civilian buyers quick, convenient access to the tremendous production facilities of 33 great textile mills.

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Southeastern Cottons, Inc.

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HERE'S an inexpensive, practical moisture tester that accurately and rapidly determines moisture content. Assures tremendous savings in processing time, reductions of rejections and improvements of product quality. Has universal motor-driven fan mounted on cast aluminum frame. Sample pan is easily inserted or removed. Portable. Used by many of the largest textile plants.

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CROSS COTTON MILLS CO.
THREE DOUBLE CARDED PLY
MARION, N.C.

NEWS ABOUT MEN

who have held their positions at Erwin for many years.

George W. Murphy, Jr., has been made superintendent of spinning at the plant of S. A. Fabrics Argentine de Alpergatas, Buenos Aires. He is son of **George W. Murphy,** of the Atlanta office of H. & B. American Machine Co.

Frank E. Vantine, treasurer, Republic Cotton Mills, Great Falls, S. C., resigned, effective Feb. 15.

Conrad R. Wenner, superintendent of weaving for Duplan Corp., Hazleton, Pa., has resigned. He joined the company 30 years ago as a weaver.

W. E. Reid, for several years manager of the finishing department of Trion (Ga.) Co., has been appointed assistant general manager of all of the company's properties.

Clarence Davis, for several years overseer of finishing of Gordon Woolen Mill, Hillsborough, N. H., has taken a similar position at the American Woolen Co. plant in Lebanon, N. H.

Wyley Hunnicutt is the new general superintendent of Acworth (Ga.) Mills, succeeding **J. H. Pope,** who retired after 18 years of service. **W. L. Reece** has become night superintendent.

W. Baker has become superintendent of the mechanical department of Clover (S. C.) Spinning Mills.

G. W. Hagans, overseer of carding at P. H. Hanes Knitting Co., Hanes, N. C., has been promoted to assistant superintendent.

J. H. Adams, overseer of the cloth room of Bibb Mfg. Co., Columbus, Ga., has resigned.

Arthur E. Neild, superintendent of Southern Franklin Process Co., Greenville, S. C., for three years, has resigned. He was formerly superintendent of Neild Mfg. Co., New Bedford, Mass.

Richard Bryant has been appointed overseer of second-shift carding at P. H. Hanes Knitting Co.'s No. 4 plant, Hanes, N. C.

H. L. Trotter of Leaksville, N. C., has become overseer of dyeing and finishing of Excelsior Woolen Mill, Union, S. C.

Textile Men in Armed Services

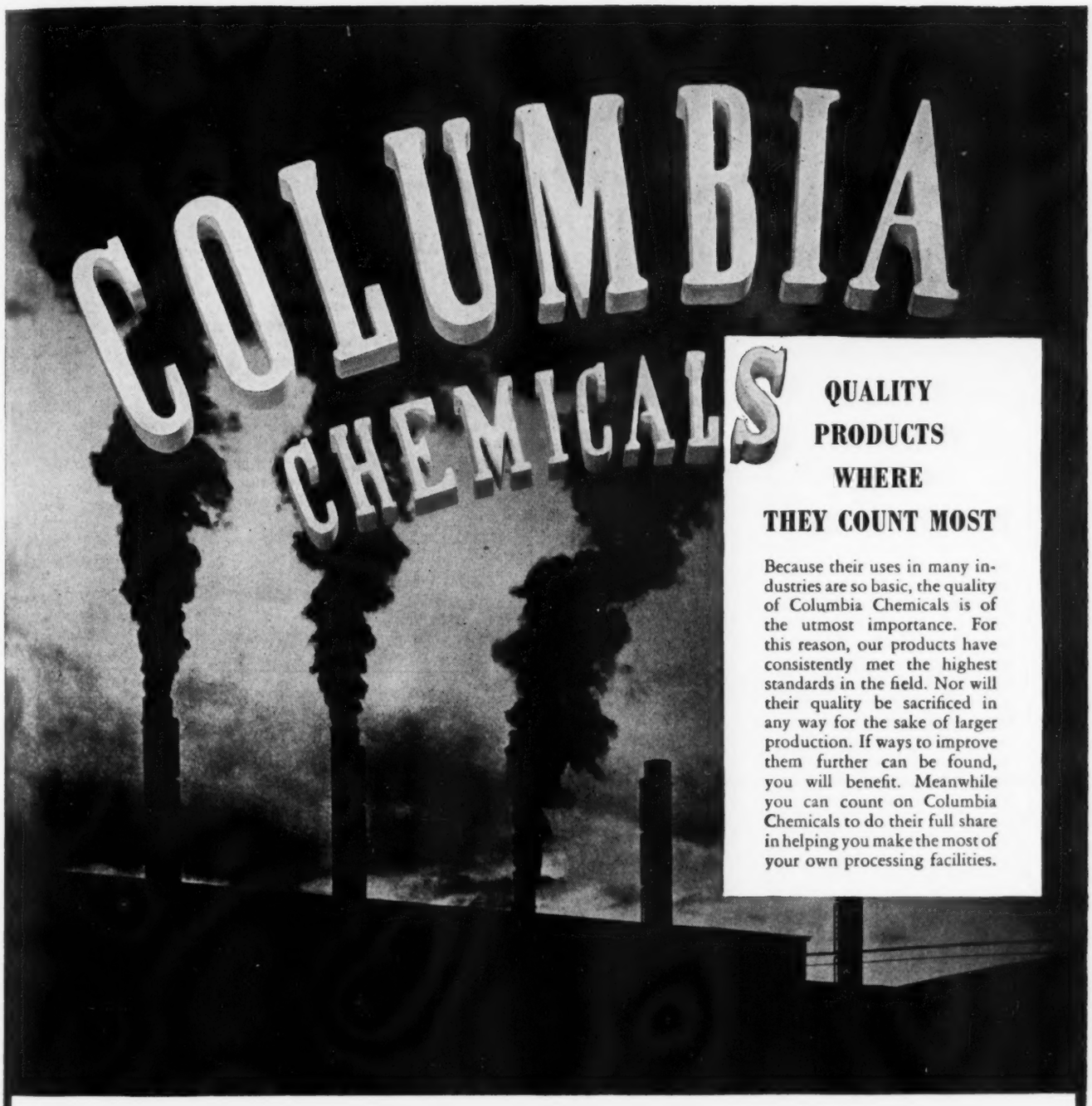
Robert T. Stevens has resigned as president and a director of J. P. Stevens & Co., New York, upon being called into active service as a colonel in Army QM Corps early in January.

Charles A. Turner, 1941 textile graduate of Clemson (S. C.) College, has been commissioned an ensign in Naval Reserve and has reported for aviation patrol duty at Norfolk, Va.

Harold Tanney, for the last three years with the sales staff of Botany Worsted Mills, New York, left on Jan. 20 to join the United States Air Corps.

James W. Sears, assistant superintendent, Roanoke (N. C.) Mill No. 1, has been called for active duty with the Army and will report at Fort Ben-

CAPT. DWIGHT WILHELM, formerly secretary of Alabama Cotton Mfrs. Assn., at his desk at Maxwell Field, Ala.



QUALITY PRODUCTS WHERE THEY COUNT MOST

Because their uses in many industries are so basic, the quality of Columbia Chemicals is of the utmost importance. For this reason, our products have consistently met the highest standards in the field. Nor will their quality be sacrificed in any way for the sake of larger production. If ways to improve them further can be found, you will benefit. Meanwhile you can count on Columbia Chemicals to do their full share in helping you make the most of your own processing facilities.

ESSENTIAL	SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE
INDUSTRIAL	SILENE • CALCIUM CHLORIDE • SODA BRIQUETTES • MODIFIED SODAS
CHEMICALS	CAUSTIC ASH • PHOSFLAKE • CALCENE • CALCIUM HYPOCHLORITE

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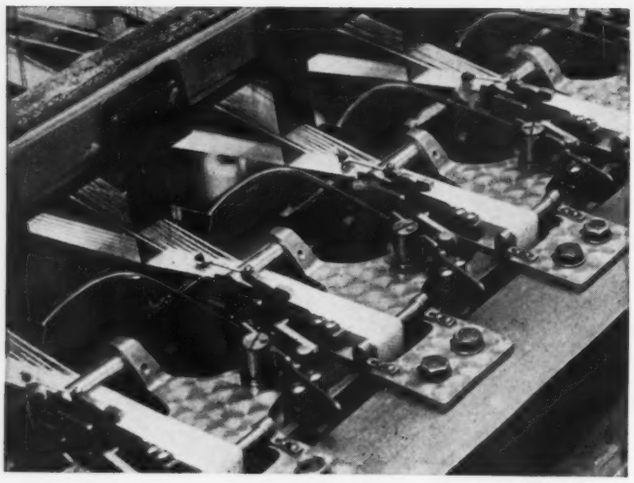

CLUTSOM HIGHSPEED LOOMS

The most important manufacturers of Webbing, elastic and non-elastic, for the British Armed Forces use the Clutsom Loom. Before and since England went to war millions of yards of webbing have been produced on these machines for the use of the Services. If you have, or are interested in obtaining Defense contracts we suggest you let us explain to you the many advantages of this loom and give you a demonstration. But whatever you make in narrow fabrics the Clutsom loom will be of interest and value to you.

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COLORED GOODS

THIS non-abrasive grit free white inert has won favor with Textile men for filling colored goods because of its smoothness and its ability to mix readily with gums, starch, water, etc.

Will not injure Doctor blade, cutting knives or warp needles.

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Shipped bone dry, airfloated in 50 lb. papers.

UNITED CLAY MINES CORPORATION

TRENTON NEW JERSEY

ning, Ga. He is a first lieutenant.

Thurmond Chatham, president of Chatham Mfg. Co., Elkin, N. C., has volunteered for active duty in the Navy. He saw active service with the Navy in the first world war, and expects to be called soon.

Richard Penfield, chief engineer of the Amcelle (Md.) plant of Celanese Corp. of America, a lieutenant-colonel in Chemical Warfare Reserves, has been called to active service. He reported Jan. 15 at Edgewood Arsenal, Md.

Charles Chester Bassett, for many years in the rayon business, first with American Viscose Corp. and later with American Bemberg Corp., New York, is now chief of the liaison section of the Air Corps Ferrying Command, at Wright Field, Ohio, with rank of captain.

Mark W. Cresap, Jr., secretary and merchandising manager of George B. Stetson Co., Philadelphia, is now on active duty as a lieutenant in U. S. Army, stationed at the office of the Under-Secretary of War, Washington.

J. O. Thomas, personnel manager of Marshall Field & Co., Spray, N. C., and president of Southern Textile Association, has been ordered into active service as an Army lieutenant at Camp Lee, Va. He served 18 months in France in the last war, and has been with Marshall Field for 22 years.

Ed Spears, a foreman at Erlanger Mills, Lexington, N. C., has enlisted in Naval Reserve for active duty. He was a yeoman in the Navy in World War I, and his son is now on active duty in that branch of the service.

James E. Greer, Charlotte, N. C., textile chemist for American Aniline Products, Inc., of that city, has been called into active duty with the U. S. Army as first lieutenant in the Chemical Warfare branch, Fort Benning, Pa.

Obituary

Austin H. Carr, 48, president of Durham (N. C.) Hosiery Mills, died suddenly while visiting the New York office of his company on Feb. 4. He was the son of Julian S. Carr and became vice-president of Durham in 1915. He succeeded D. P. Carey as president in 1930. He was chairman of the board of National Association of Hosiery Manufacturers from 1938 to 1940.

AUSTIN H. CARR

Arthur George Green, 77, consultant to the Dyestuffs Group of Imperial Chemical Industries, Ltd., died at Walton-on-Thames, England, last fall. He was the discoverer of primuline, active in development of the British dye industry, educator, industrial research chemist, inventor, and author.

Fred Lewis Smyre, 61, president of A. M. Smyre Mfg. Co., and president of Morrowebb Cotton Mills Co., Dallas, N. C., died in Gastonia, N. C., Jan. 30.

William George Thomas, 51, partner in Crosley & Thomas, yarn merchants of Charlotte, N. C., died Feb. 4.

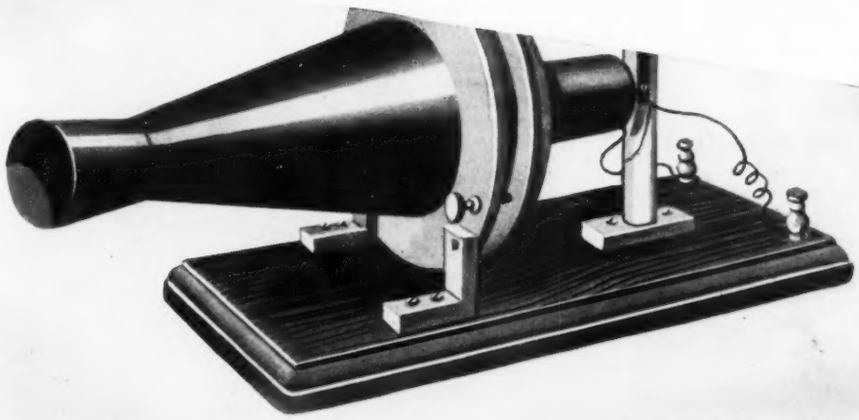
Jean L. Duplan, 80, founder of Duplan Corp., New York, who retired from active connection with that firm in 1920, died near Paris, France, on Dec. 26. He came to this country from France in 1898. Although long prominent in silks, he early recognized the importance of rayon, and his firm's Baronet satin was among the first successful rayon fabrics to be produced by a silk mill.

Harold Miles, 74, who had been president of the old firm of A. G. Hyde & Sons, New York, over a 16-year period, died last month.

August Egerer, 62, president of S. Augstein & Co., New York, died in Great Neck, N. Y., Jan. 4. Mr. Egerer was born in Prague, came to New York in 1906 and entered the employ of S. Augstein & Co. as a shipping and stock clerk. He was chairman of the Knitted Outerwear Code Authority during the NRA, and was a former president of the Na-

For the textile industry Penn Salt makes

CAUSTIC SODA · HYDROGEN PEROXIDE · BLEACHING POWDER
CHLORINE · SULPHURIC ACID · HYDROCHLORIC ACID · CARBON
BISULPHIDE · AMMONIUM PERSULPHATE · ANHYDROUS AND AQUA AMMONIA



MUTE METAL WAS MADE TO SPEAK . . . . . ALMOST BY ACCIDENT

The alertness of Alexander Graham Bell, a teacher of human mutes, was vital to his discovery of how to make mute metal speak. Experimenting with a harmonic telegraph, he stumbled on the principle of the telephone, was quick to realize its value and to make long-distance speech a reality.

Alertness is important in our business, too. Whether developing a new chemical . . . or improving an existing product . . . or "trouble-shooting" in a customer's plant . . . our men show an alertness that adds new vigor to the solid reputation for integrity in chemical manufacturing which we have earned throughout American industry during the years since 1850.

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PLANTS: PHILADELPHIA • EASTON • NATRONA • WYANDOTTE • TACOMA • PORTLAND, ORE.

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★ RINSES EASILY AND COMPLETELY
★ IMPROVES FULLING AND SCOURING
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★ PRODUCES FINEST HAND
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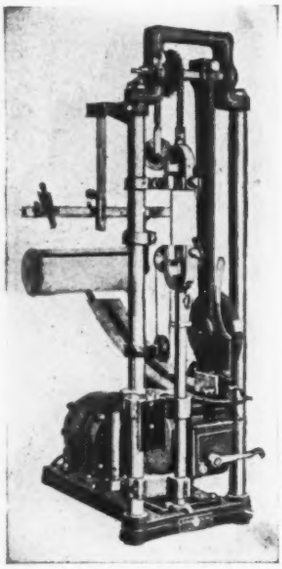

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with or without
AUTOGRAPHIC CHART
with 2 or 3 ranges from

0— 50	0— 75
0—100	0—150
0—200	0—300

Maximum capacity: 500 lbs.

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Ask for new Catalogue

ALFRED SUTER
200 FIFTH AVE., NEW YORK
"Approved Testing Instruments"

NEWS ABOUT MEN

tional Knitted Outerwear Manufacturers Association.

John Hollbach, 75, at one time head of Hollbach Silk Co., Paterson, N. J., died recently. He retired ten years ago. He is credited with having brought from Europe one of the early consignments of rayon yarns, early in the present century.

John S. Turner, 76, president of Philadelphia (Pa.) Silk Co., died Jan. 16. He had engaged in the textile business in Philadelphia since 1909.

Samuel S. Peters, 67, former operator of the OK Hosiery Mill, Lemoyne, Pa., and the Peters Hosiery Mill, New Cumberland, Pa., died at his home in Linglestown, Pa., recently.

Lewis Albert Bassett, 83, president of Hendrick Mfg. Co., Carbondale, Pa., died in Carbondale Jan. 2. He joined the company as a utility man in 1878.

Alfred B. Kuhn, 57, president of the Fiber Mfg. Co., Newton, N. C., died Dec. 27.

Frank W. Goldense, 46, production manager of Guyon Mills, Valley Falls, R. I., died in Pawtucket, R. I., Jan. 11.

Edward E. Leonard, 63, general manager and a director of Union Wadding Co., Pawtucket, R. I., died on Jan. 5. He was also treasurer of Crown Mfg. Co., Pawtucket.

Fred Weston Glover, 67, president of the Textile Mill Supply Co., Charlotte, N. C., died recently. He was one of the founders of the firm and had been president since 1918.

Melville Turner, 41, superintendent of Spalding Knitting Mills, Griffin, Ga., died Jan. 6.

Maurice B. Jacobsohn, one of the founders of Weehawken (N. J.) Dye Works, died Jan. 15.

John Richardson Butterworth, Jr., 60, president of Textile Products Co., Inc., Providence, R. I., died Jan. 15.

Casper G. Decker, 81, chairman of Elmira (N. Y.) Knitting Mills, died Jan. 25.

Walter B. Daniels, 60, superintendent of Progressive Silk Mills, West Hazleton, Pa., before it suspended operation, died recently in Philadelphia.

Moore Kelly, 79, founder of Granby Mfg. Co., Granby, Quebec, Canada, died last month at Richford, Vt.

George T. Bartlett, 71, general superintendent and buyer for Seymour (Ind.) Woolen Mills, died recently. He had been with the mills since 1889.

Walter William Scott, 63, former vice-president of the Gardiner - Warring Knitting Mill, Florence, Ala., died at his home in Amsterdam, N. Y., last month.

Henry H. Iler, chief engineer of Union Bleachery, Greenville, S. C., died Feb. 4. He was a past president of the S.T.A., and a frequent contributor to TEXTILE WORLD.

Henry Feuerstein, 79, founder and president of Malden (Mass.) Knitting Mills, died Feb. 1. He was also director of Malden Spinning & Dyeing Co.

William W. Gordon, 75, partner in Gordon & Gordon, Hazardville, Conn., died Jan. 28. He was vice-president of Gordon Bros., Inc., and also a director of the Assawaga Woolen Co.

Charles T. Plunkett, Jr., 55, a director of Berkshire Fine Spinning Associates, Inc., Adams, Mass., and a former president of W. C. Plunkett & Sons Co., died Jan. 26 in Rio de Janeiro.

Michael H. Roberts, 66, formerly superintendent of Rhode Island Worsted Co., for 16 years, died Jan. 22 in Stafford Springs, Conn. At the time of his death he was representative for Ernest Bischoff Co., Ivoryton, Conn.

James Harper, 64, overseer of winding, slashing and twisting at A. & M. Karagheusian, Freehold, N. J., for the last seven years, died recently.

Casper G. Decker, co-founder and chairman of the board of Elmira (N. Y.) Knitting Mills, died Jan. 25.

Luke H. Rooney, 68, died recently in Dighton, Mass. Starting his textile career as a boy, he was superintendent of Manomet Mill, New Bedford, Mass., for many years until the corporation was liquidated.

John D. Barrett, 71, overseer of the slasher room at Dunean Mills, Greenville, S. C., for many years, and more recently with Brookside Mill, Knoxville, Tenn., died Dec. 31.

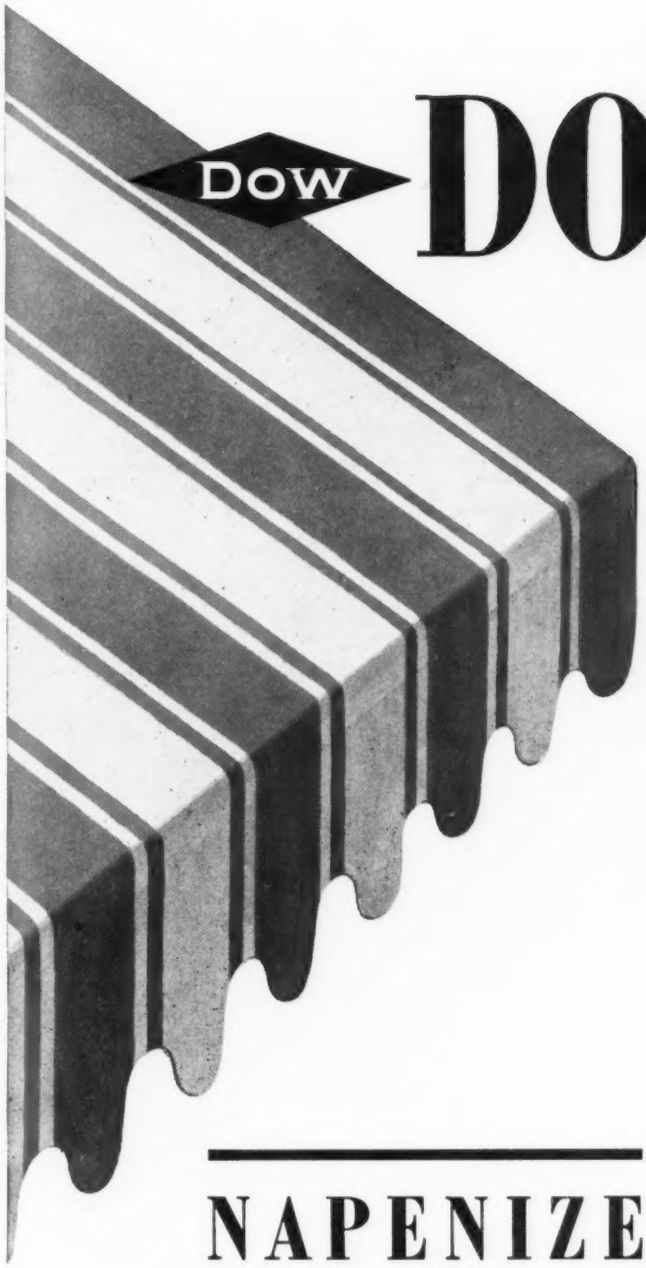
Raymond J. Blum, 62, who retired three years ago as superintendent of Duryea Silk Co., died Jan. 20 at Dunmore, Pa.

Gerhard C. Gustafson, 71, retired overseer of the Elliott Silk Mill, died in Manchester, N. H.

Karl Anton Ohman, foreman of Kennedy Knitting Co.'s bleachery at Van Slyck Island, near Troy, N. Y., died recently at his home, the historic Van Schaick mansion, built before the Revolution.

Robert Wells Poole, 65, for 42 years service man for Draper Corp., Spartanburg, S. C., died recently.

FOR THE PREVENTION OF MOLD GROWTH ON AWNING STRIPES



DOWICIDE VI

DOWICIDES ARE FINDING important application as an effective means of preventing mold growth in paints. When Dowicide-treated paints are applied to cloth it may be expected that the stripes will be mold resistant and some degree of mold resistance imparted to the cloth itself. This protection is the result of the fungistatic action of the Dowicide VI.

Briefly defined, Dowicides are a group of phenolic derivatives which have proven their effectiveness in controlling a wide variety of micro-organisms. Even in atmospheres of high humidity they are thorough and dependable in inhibiting mold growth—thus preserving beauty and life of the awning cloth.

The low cost and complete effectiveness of Dowicides have earned the approval of the awning industry. For complete information on this application of Dowicide VI, write to the Dowicide Division.

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NAPENIZE is the name given to a new anti-mildew treatment that assures canvas products a greater degree of protection than has been commonly attainable. The physical affinity of the chemical compound for the cloth makes this possible—resulting in longer life for the product. No waterproofing is required to retain the effectiveness of the treatment. NAPENIZE is simple and inexpensive. It provides more effective protection for canvas materials with a minimum loss of tensile strength. Dowicide T. M. Reg. U. S. Pat. Off.

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TEXTILE MILL NEWS

Cotton Mill News

Anderson (S.C.) **Narrow Fabrics, Inc.,** have been chartered. Ed. A. Hill is president of the new concern; Walter H. Hartzell, vice-president and treasurer; Katherine C. Hill, secretary. Authorized capital is $25,000.

Ariguanabo textile interests, Bauta, Cuba, are modernizing their mill and finishing plant equipment. Four hundred looms of a 1,000-loom order will soon be installed, and the remainder as soon as possible.

Avondale Mills, Sylacauga, Ala., have completed installation of two new Morton system horizontal beam-dyeing machines, which gives this group of mills 19 of these machines. The new machines were installed in the Alexander City, Ala., and Sylacauga units.

Bay State Thread Works, Springfield, Mass., is making improvements at mill, including installation of a new concrete tank, for which contract has been awarded to H. E. Burnham, Springfield.

Belton (S.C.) **Mills** have completed modernization and improvement program, with installation of three new warpers, two spoolers and auxiliary equipment, all Barber-Colman. New long-draft equipment is being installed.

Bourne Mills report net profit for fiscal year ended Oct. 4, 1941, of $216,923, compared with $125,627 for previous fiscal year.

Buffalo Cotton Mill, Shelby, N. C., was damaged by fire to extent of about $7,500 on Jan. 30.

J. R. Bux & Son, 4080 Frankford Ave., Philadelphia, Pa., manufacturers of webbings, tapes, etc., have purchased former local mill of Co-ed Hosiery Mills, Courtland and Fairhill Sts., on site about 110 x 125 ft., and will use for new plant, with equipment and facilities for increased production.

Canadian Cottons, Ltd., Cornwall, Ont., have plans nearing completion for new four-story mill addition, reported to cost approximately $125,000, including equipment. It is proposed to begin work at early date.

Cliffside Mills, Haynes unit, Avondale, N. C., have completed an addition to house a new Sanforizing machine.

Columbia (S.C.) **Duck Mills** went on a seven-day work week, 24-hour day, on Dec. 21 to complete national defense orders on schedule.

Cooperative de Lin du Bail de Febrve, La Bail, Quebec, is building a flax mill costing $50,000.

Davidson (N.C.) **Cotton Mills** have installed a fourth Morton dyeing machine.

Dixie Cotton Mills, LaGrange, Ga., have completed a two-story addition, in which 20 new Saco-Lowell cards and five new one-process pickers will be installed. Additional looms will be added later. The opening room is now being modernized. Company has under construction addition to twister room which will be used as a yarn storage shed.

Dwight Mfg. Co., Alabama City, Ala., when it began expanding the plant about a year ago, leased the major part of the machinery installed, because of uncertain business situation at that time. In the fall, however, the company decided to purchase the machinery. Dwight reports net profit for fiscal year ended Nov. 29, 1941 of $575,750, compared with $401,521 for previous fiscal year.

Florence Mills reports net profit of $335,489 for fiscal year ended Sept. 27, against $154,683 for previous fiscal year.

Gilman Bros., Stafford, Conn., a new industry, has started production in a local mill of Reyn-O-Cal, a fire-resistant cotton insulating material.

Gonzales (Texas) **Cotton Mills'** half interest owned by the late Spencer M. Ainsworth has been purchased by his brother, A. G. Ainsworth.

J. & C. Cottons, Ellijoy, Ga., is now operating 4,800 spindles on 7s to 12s cotton yarn for use in bedspread tufts.

T. T. Leonard and **Christian Peterson,** Silverton, Ore., head a project to construct and operate a flax mill, on site near Silverton, now being acquired. Plant will be one-story, to cost about $35,000, with machinery. Charles Leonard, Dallas, Ore., is interested in new plant.

Martel Mills Corp., New York, report net profit for fiscal year ended Sept. 27, 1941, of $426,280, compared with net for previous fiscal year of $177,459.

National Wadding Co. is now at the City Mills, Franklin, Mass. The factory was formerly at Mattapan.

Naumkeag Steam Cotton Co., Salem, Mass., reports

BARBER-COLMAN SYSTEM OF SPOOLING AND WARPING

MORE YARN-HANDLED EASIER

Trident Trucks and Transfer Tables Save Time and Effort for Operators on Barber-Colman Spoolers

The Spooler girl removes full cheeses from the throw-out position and drops them onto the spindles of tridents on a small truck which she pushes along a track as she works. Full tridents are moved to the transfer table by an easy push--no heavy lifting is necessary. These convenience features help Barber-Colman Spooler operators to get out more work with less effort.

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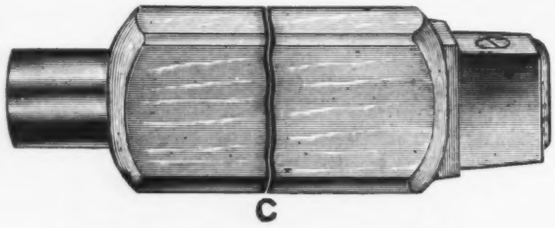

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50th YEAR OF SERVICE

Benjamin Booth Company

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net profit of $749,915 for fiscal year ended Nov. 30, 1941, compared with $182,976 for previous fiscal year. Sales totaled $10,090,268 against $5,306,046.

Pinehurst Cloth Mill, Inc., Hemp, N. C., is the new name for the Pinehurst Silk Mills, Inc.

Quissett Mills, New Bedford, Mass., by a vote of 9,842 to 2,118 in favor of the present management declared against a liquidation move started by minority holders.

Santee Mills, Orangeburg, S. C., unit, are installing two new Abbott winders and one Cocker Hi-Speed warper.

Sapona Cotton Mills, Inc., Cedar Falls, N. C., plans rebuilding of portion of mill, recently destroyed by fire. Loss reported close to $70,000, including equipment.

Southern-Brighton Mills, Shannon, Ga., and the Brighton Mills of New Jersey have perfected a merger, and the named changed to Brighton Mills, Inc., a Georgia concern.

United States Rubber Co. has purchased the Hogansville (Ga.) plant of Callaway Mills, which will enable company to make substantially all its own duck for belting, hose, and other mechanical goods. U. S. Rubber will soon build a plant in Hogansville, adjacent to its Stark Mills, to make asbestos yarns and fabrics, sold under the brand Asbeston.

Universal Cotton Products, Inc., Lambertville, N. J. (previously reported) has temporarily abandoned plans for proposed new local mill.

Whitney Mills, Spartanburg, S. C., have been sold to Jacob Ziskind of Fall River, Mass., with approval of stockholders for about $425,000.

Winnsboro (S. C.) **Mills** are planning for change in production to cotton duck, with equipment extensions and replacements for this purpose.

Woodside Cotton Mills Co., Simpsonville, S. C., will construct one-story addition for expansion in cloth room. Erection will begin soon. Cost reported close to $40,000, with equipment. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

Wool Mill News

Amoskeag - Lawrence Yarns, Inc., Machester, N. H., has been taken over by Kammak Mills, Inc., of Kulpmont, Pa.

Belmont Woolen Yarn Mill, Woonsocket, R. I., has awarded contract for a one-story brick building and frame addition, 30 x 100 ft, to cost about $10,000.

Berkeley and Dunn Woolen Mills, Martinsburg, Va., have gone on 24-hour, seven-day work schedules to fill contracts for Army overcoatings.

Charlottesville (Va.) **Woolen Mills** are installing new and larger drying machinery.

Furman Brothers Co., Norwich, Conn., has been chartered with capital of $75,000, to operate a local woolen mill. Early production is planned. New company is represented by Florence Robarge, Norwich, one of the incorporators.

General Floor Covering Co., Philadelphia, Pa., organized to manufacture rugs, carpets, etc., has arranged for lease of former local mill of the Dainty-Foot Hosiery Mill, Margaret and Ditman Sts., and will occupy at early date.

Hodges Carpet Co., Indian Orchard, Mass. has started moving its machinery into three floors of the main building of the No. 1 plant of the former Farr Alpaca Co., Holyoke, Mass. Hodges will employ at least 200.

Homestead Woolen Mill, West Swanzey, N. H., suffered several thousand dollars damage in a fire on Jan. 9.

Hudson River Woolen Mills, Newburgh, N. Y., recently sold machinery and equipment at auction for a total of $10,912.

Keyser (W. Va.) **Worsted Mills** have been sold by Botany Worsted Mills to A. Rubinstein, Brooklyn, N. Y. Name will be changed to Potomac Worsted Spinning Mills. It will continue to operate, and Botany will continue to purchase its Bradford spun yarns from it.

C. H. Masland & Sons, Carlisle, Pa., have leased 172,000 sq. ft. of floor space in the Aberle Mills, Philadelphia, at a rental including power and services, approximating $300,000. The lessee in addition to weaving floor coverings is manufacturing duck for the Government, and has large contracts under the Ordnance Department for its machine shop at Carlisle.

Pendleton Woolen Mills, Plant No. 2, is the firm name under which C. M. Bishop and C. M. Bishop, Trustee, have obtained a certificate to conduct business at 746 South Los Angeles St., Los Angeles, Calif.

Rochdale Mills, Inc., Leicester, Mass., recently organized with capital of 500 shares

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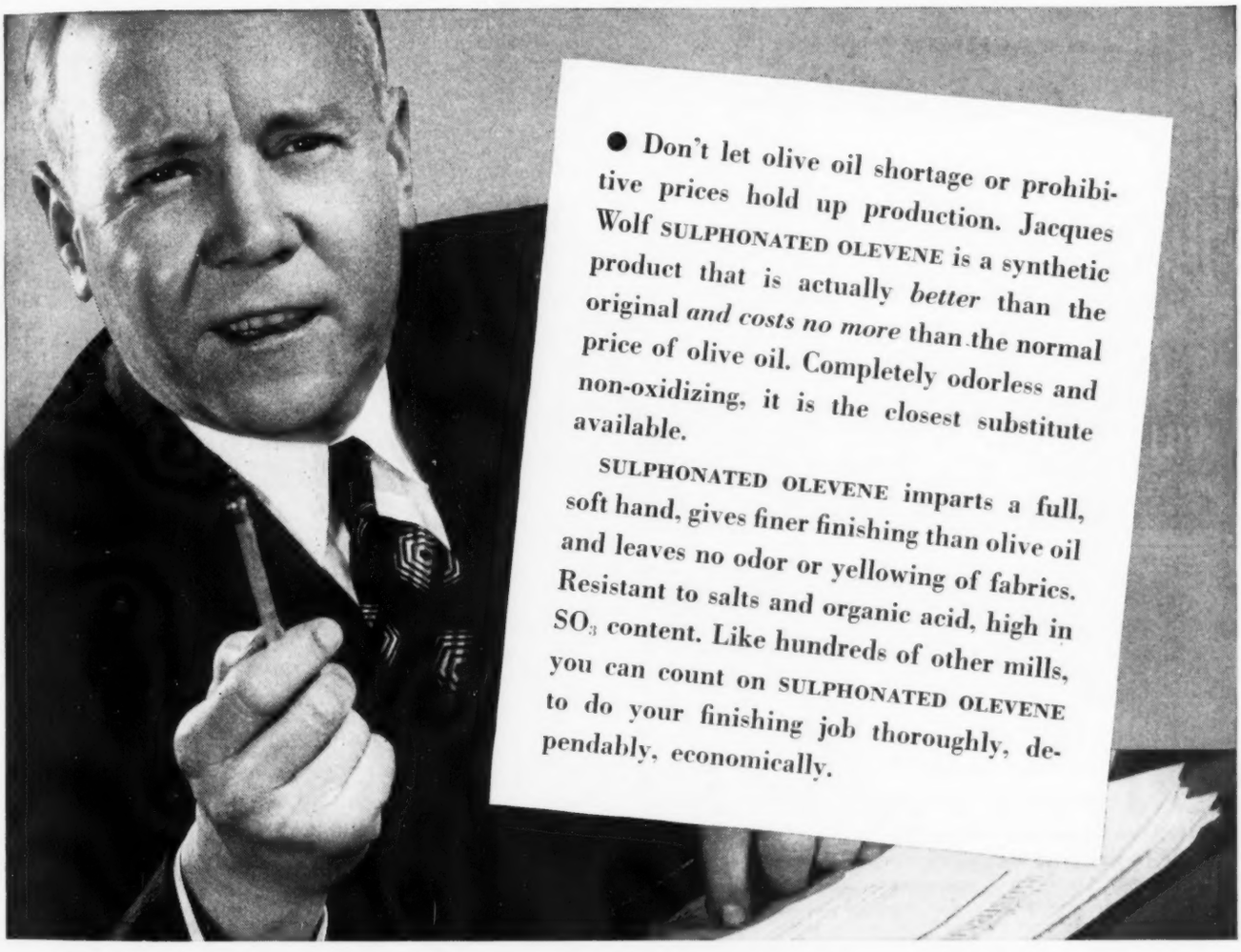

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April Issue of Textile World
will contain
Guide to Exhibits
at
Knitting Arts Exhibition
(Atlantic City, April 27–30 inc.)

of stock, no par value, plans operation of a local woolen mill. John Hoenig is president; George W. Musgrave, Webster, Mass., is treasurer.

Montgomery Worsted Co., Philadelphia, Pa., has purchased mill property at Tackawanna and Ruan Sts., for a reported consideration of $20,000, heretofore occupied under lease.

Montrose Worsted Mills, Ltd., Granby, Que., recently organized, plan for one-story mill, reported to cost about $50,000.

West Haven (Conn.) **Rug Co.,** recently organized, is planning operation of a mill for production of rugs and floor coverings. John H. Gilmour, New Haven, Conn., is head.

Wool Products Industries, Inc., St. Paul, Minn., has awarded contract to Harold T. Purtell, St. Paul, for one-story addition, about 24 x 30 ft., to be used for general operations.

Rayon Mill News

American Enka Corp., Enka, N. C., is planning construction of a number of air-raid shelters at local mill.

Canisteo (N.Y.) **Corp.,** formerly known as Canisteo Silk Co., has resumed operations at branch mill at Nunda, N. Y., closed for some time, and will manufacture parachute cloth for Government.

Burlington (N.C.) **Mills Corp.,** reported for the fiscal year ended Sept. 27 net earnings of $3,373,558, equal, after all charges and taxes, to $4.87 a share on the common stock. Net sales were $63,165,310.

General Textile Mills, Inc., Lonaconing, Md., has been renovated and new machines installed according to Chas. W. Walters, superintendent. Plant has been closed but is planning to reopen on rayon goods or war materials.

Judy Textile Corp., and **Guarantee Silk Co.,** Reynoldsville, Jefferson County, Pa., both operated under management of Charles Sommers, DuBois, Pa., were destroyed by fire Jan. 9 with a loss of approximately $200,000. Plans for rebuilding are under consideration.

White Bros. Mill, West Peterborough, N. H., has been purchased by Gilbert Verney, Manchester, N. H., for the manufacture of a special type of rayon fabric used for defense purposes. The factory, idle for more than two years, has 102,230 sq. ft. of floor space, and is expected to be in full production by May.

Knitting Mill News

Aileen Mills Co., Biscoe, N. C., has installed three Cidega knitting looms.

Allen A Co., New Ipswich, N. H.—It was incorrectly stated in these columns lately that Tricnit Hosiery Mills had bought all the knitting machines of Allen A. Actually Tricnit bought only part, the major portion going to Morris Speizman, Charlotte, N. C., including 44 Banner wraps, 50 Scott & Williams B-55; also S. & W. RI's, ribbers, winders, loopers, etc.

Big Four Co., Inc., Riverside, N. J., recently organized with capital of $1,000, is planning early operation of local mill for the manufacture of seamless hosiery. Christopher N. Peditto, Riverside, is one of the incorporators.

John Blood & Co., Inc., Boyertown, Pa., according to recordings in the Berks County Court, at Reading, Pa., have sold their mill property at Boyertown, Pa., to Bernard, Sol, George and Philip Berman for a consideration of $16,000. This was a branch mill of Blood's Philadelphia plant.

Blytheville, Ark.—B. A. Lynch will establish and operate a plant on Nylon hosiery here. Total cost will exceed $300,000, it is said.

California Knitcraft Co., 1125 Wall St., Los Angeles, Calif., has filed notice of organization to operate a mill.

Continental Hosiery Corp., New York, N. Y., care of Henry Uttal, 521 Fifth Ave., New York, representative, recently chartered with capital of $200,000, plans operation of a knitting mill for manufacture of women's hosiery.

Elliott Knitting Mills, Hickory, N. C.—Addition to the finishing plant at Catawba, N. C., has been completed and new machinery installed. The floor space of the finishing department has been increased about 7,500 sq. ft. The Havana, Cuba, branch of this mill is running 24 hours daily.

Fairy Silk Mills, Shillington, Pa., have been released from reorganization proceedings and to receiver, Earl S. Jenckes, has been discharged.

Fenway Knitting Mills, Inc., Brooklyn, N. Y., care of Louis Pressman, 22 East Fortieth St., New York, N. Y., plan operation of a local mill on a line of outerwear.

Forest City Knitting Co., Rockford, Ill., is making alterations and improvements in mill, for which general contract was let recently to Security Building Co., Rockford.

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WAR demands the best in all of us. Because only the best rates a passing mark. Right now textile mills are doing their full share in equipping the world's greatest fighting force. In the weaving of cloth for military and naval purposes only the right starches — the *best* starches will do. These are no times for hit and miss or trial and error operation. That's why Staley's strict chemical control, completeness of line and availability (Staley starches have *always* been obtainable) are now more important than ever. Staley's manufacture a complete line of thick and thin boiling corn starches—a product for every textile mill use. These mill starches have been developed by skilled chemists. And they are produced under strict chemical control from the buying of native corn to the finished product. Staley's *know* what their starches will do. Most important, they *know* what their starches will do *for you*. Write, wire or telephone for information.

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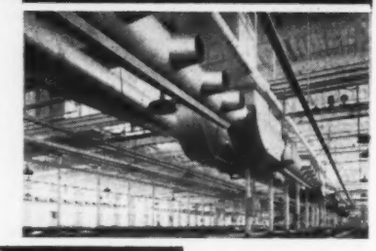

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TEXTILE MILL NEWS

Gotham Silk Hosiery Co., New York, N. Y., has closed its branch mill at Wharton, N. J., and machinery and equipment have been sold. Plant will be dismantled.

Grenada, Miss.—The City of Grenada will enlarge its present hosiery mill building at a cost of $50,000. E. L. Malvaney, Jackson, Miss., has been selected as architect.

Hosiery Sales Co., 12 West 37th St., New York, has opened a plant to make cut and sewn lace hosiery with capacity of 2000 doz. prs. weekly.

Interstate Hosiery Mills, Albany, Ga., has purchased eight 45-gauge full-fashioned knitting machines, and will install at once.

Kenosha (Wis.) **Full-Fashioned Mills, Inc.,** have purchased the J. H. Cownie Co., Des Moines, Ia., manufacturer of sport and work clothing and is moving the business to Kenosha. The business will be operated as the J. H. Cownie Co. division of Kenosha Full-Fashioned Hosiery Mills, Inc.

Lee Knitwear Corp., 1410 Broadway, New York, N. Y., has leased space in building at 48-56 West 38th St., approximating 10,000 sq. ft. of floor space. Present plant will be removed to new location.

Mayfair Knitwear Corp., New York, N. Y., has been organized with capital of $60,000, to manufacture knit goods of various kinds. Company is represented by Charles W. Newmark, 60 East 42nd, St., New York.

McLaurin Hosiery Mill, Asheboro, N. C., has been sold to Burlington Mills Corp.

Meadow Hosiery Mills, Inc., Kulpsville, Pa., has been incorporated in Pennsylvania. Authorized capital is $10,000. Incorporators are Samuel B. Fortenbaugh, Jr., Catherine T. Matson, and M. E. Kelly, all of Philadelphia.

E. Richard Meinig Co., Reading, Pa., have been granted a building permit for a one-story brick and frame addition to cost $3,000.

Oscar Nebel Co., Hatboro, Pa.—Former mill of this company at Hatboro, idle for some time, has been sold by Oscar Nebel Hosiery Corp., to Joseph H. Reilly, Hatboro.

Nocturne Corp., Rock Hill, S. C., has been formed with capital of $1,000 to manufacture and sell hosiery and knit goods of all kinds. Officers are W. A. Dodd, president; F. K. Hayes, vice-president; H. Mc. McMahan, secretary and treasurer.

Oakhurst Knitting Co., Charlotte, N. C., recently chartered with capital of $200,000, plans operation of a local hosiery mill. New company is represented by B. I. Boyle, Charlotte.

Pacific Knitting Mills, Los Angeles, Calif., recently organized, will take over and succeed to company of same name, with mill at 443 San Pedro St. A. H. Barber, Pasadena, Calif., is one of incorporators.

Parker Hosiery Mills & Dye Works, Norfolk, Va., have been sold at auction to the RFC on a bid of $49,500.

Rodgers Hosiery Co. is liquidating its plant at Lawrens, S. C., according to H. E. Pearson, manager. Part of the machinery is being moved to the Athens, Ga., plant, and the real estate is being offered for sale.

Vance & Crawford, Kernersville, N. C., seamless hosiery, are installing 20 additional knitting machines, rebuilt Banners, which will bring the company's total number to 48.

Warsaw (N.C.) **Chamber of Commerce** announces that plans are under way for establishment of a circular knitting mill in that place.

Processing Plant News

Algonquin Printing Co., Fall River, Mass., sold its machinery, including 13 printing machines and 1510 copper printing rolls, on Feb. 3, by auction. Printing machines, ranging from $225 to $600 apiece, totaled $4,670.

Lavonia (Ga.) **Mfg. Co.** has installed a new Morton raw stock dyeing machine.

Milwaukee Dye & Bleaching Co., Milwaukee, Wis., has begun construction of new boiler house at mill, 22 x 41 ft., for which general contract recently was let to Edward Steigerwald & Sons, Inc., Milwaukee.

Mowry Finishing Co., Glastonbury, Conn.—Mill property of this company, consisting of a main multi-story structure and two smaller buildings, taken over by RFC when company suspended operations a number of months ago, have been secured by the U. S. Army, and will be used in connection with defense work.

Rosine Textile Printing Corp., 136 West 22nd St., New York, N. Y., has leased a floor in building at 9 West 20th. Street, and will occupy for plant, expanding present operations.

Your Way is Right . . .

You get the results you want by processing according to your own formula. Your formula is different from anyone else's, because it is suited to your mill, your workmen, and the textiles you make.

That is why Armour and Company makes so many textile soaps—different soaps for the same operation. That is the only way we can be sure of pleasing you. Whatever your formula is, we are sure we have a soap to suit you. For scouring cotton and fulling heavy wool, you may prefer **Flint Chips,** or **Flint Powder,** both made from a tallow base, with a titer of 41-42° C. If you want a lower titer, we have **Industrial Chips** and **Industrial Powder,** also from a tallow base, titer 39-40° C.

FLINT CHIPS AND POWDER—
Tallow Base, Titer 41-42° C.

INDUSTRIAL CHIPS AND POWDER—
Tallow Base, Titer 39-40° C.

CERTIFIED SOAP—Vegetable Base

VERDANT SOAP—Low Titer Base

TEXSCOUR FLAKES—Red Oil Base

For silk throwing and degumming, dyeleveling, wool scouring and rayon processing, Armour and Company makes **Certified Soap,** from a vegetable base, **Verdant Soap,** from a low titer base, and **Texscour Flakes,** from a red oil base.

Each of these soaps is prepared from the highest quality raw materials under constant laboratory check control. Our soaps are manufactured to meet the requirements of your formula.

Phone, wire, or write your nearest Armour man. He can show you the right soap for your mill.

ARMOUR AND COMPANY

INDUSTRIAL SOAP DEPT. 1355 W. 31st STREET, CHICAGO, ILL.

NOW! The Principle Behind Aridye Pigmented

"They Work Well Together!"

SOON after the textile printing industry had recognized the advantages of Aridye* pigmented textile colors, the question arose whether the basic principle which had made these textile coloring materials so successful could not be applied to water-soluble dyes. Now, the Aridye Corporation has developed the answer—a new Aridye base used in a new method which gives to soluble dyes the same fine printing qualities associated with Aridye pigmented emulsions.

The new method is another application of the same revolutionary emulsion principle which has made Aridye pigmented textile colors so widely accepted in the textile industry. In both cases two thin liquids are emulsified to make a thick one, of outstanding printing quality, without the addition of gums or other thickening materials which must be washed out. The result is the elimination of many of the long-standing limitations of conventional thickening methods. Now, with the introduction of the special Aridye base for dye colors, the advantages of Aridye textile coloring materials are available with either pigmented emulsions or dye emulsions containing synthetic resins.

**Reg. U. S. Pat. Off.*

ARIDYE CORPORATION • A Subsidiary of Inter-
ROCK HILL, SOUTH CAROLINA

ADVENTURES IN ARIDYE

Colors has been Extended to Soluble Dyes!

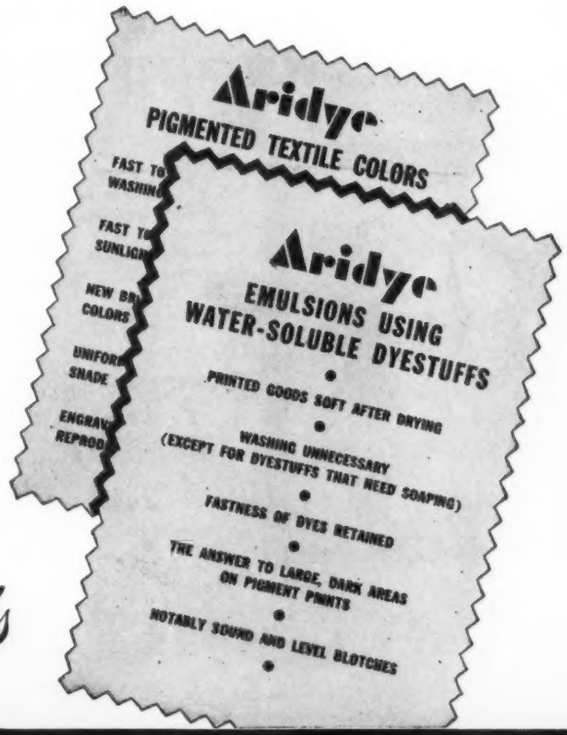
The Aridye base used in the new method endows water-soluble dyes with the fine printing qualities inherent in Aridye pigmented colors. With the new method of textile printing (Patent No. 2,202,283) you may employ the water-soluble dyestuffs you are now using. On drying after printing, the goods remain soft. They do not need washing except when dyestuffs are used of the type which require soaping to develop the color.

The introduction of the Aridye base for dyes supplements the Aridye pigmented emulsions so that it is possible to print large, dark areas with water-soluble dyes and attain the soundness and levelness associated with Aridye pigmented colors. It is now possible to use a resin-emulsion vehicle for both pigments and water-soluble dyes on the same pattern with obvious advantages in running qualities and final results . . ."They work well together!"

While the pigmented Aridye colors produce shades unobtainable heretofore, it is also true that some shades cannot be produced as yet with pigments, but are obtainable only with dyes.

The dye process offers new possibilities to the discharge printer. He can, for example, over-print pastel grounds with direct colors, getting a "discharge" effect and notably level blotches. By this method he saves the scarce materials ordinarily used.

Let us show you some of the results now being achieved when Aridye pigmented colors and water-soluble dyes applied with the new Aridye base are used on the same print. Both methods employ the same revolutionary means of preparing textile printing pastes—the emulsification of two thin liquids to produce a thick one of the proper printing consistency and having unique printing characteristics.



Aridye

Textile Coloring Materials

chemical Corporation • FAIR LAWN, NEW JERSEY
44 FRANKLIN STREET, PROVIDENCE, R. I.

300 pounds of textiles per soldier!

*Scott Testers help you produce 'em faster, better

Considering tents, tarpaulins, parachutes, plane fabric, webbing and many other items in addition to garments, it is estimated that the United States needs 300 to 350 lbs. of textile products per soldier. Producing under pressure, to strict specifications, you can more than ever benefit from an Adequate Testing Routine. PURCHASING—today a truly tough job—is tremendously facilitated by scientific testing. RESEARCH—the only answer to making maximum use of today's substitute materials—is literally based on physical testing. PRODUCTION—the crying need for every machine to turn out the absolute maximum—is kept up to peak performance and peak quality by testing control. Count on Scott for prompt and complete cooperation on any physical testing problem!

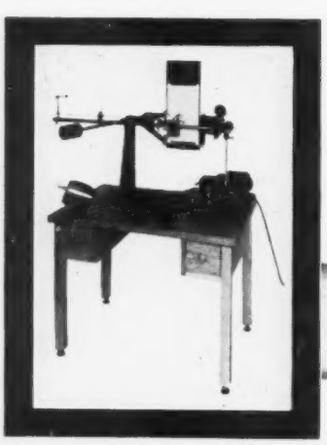
SCOTT TESTERS

* Registered Trademark

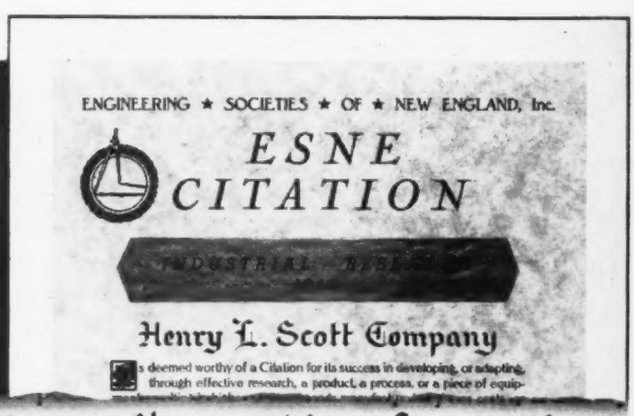
MORE THAN 60 MODELS

There is a Scott Tester for every physical testing requirement on textiles, including tensile, hysteresis, burst, flexing, crepeage, abrasion, adhesion. Capacities from single hair to 2,000 lbs. Autographic recording to read literally without calculation.

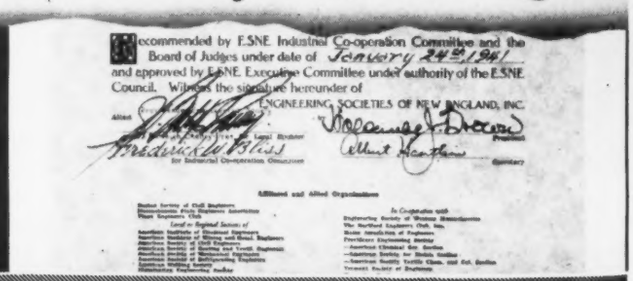
Scott Incline-plane Tester wins E.S.N.E. Citation



The exclusive Incline-plane Tester employs the most accurate principle of testing: the constant specimen rate of load. Shown at left is the "Serigraph", testing from single hair to 2,000 grams. Other Incline-plane testers have capacities up to 50 lbs.



A recording, light capacity machine for testing tensile strength of fibers with greater accuracy.



HENRY L. SCOTT CO.

95 Blackstone St., Providence, R. I.

Scott Testers — Standard of the World

ENDURO Teams with Textiles

—TO HELP SPEED PRODUCTION FOR VICTORY

Tanks—planes—ships—guns—all are essential to Victory. But so, too, are textiles—for our army must have uniforms; our civilians continue to need clothes.

The textile industry has a big job to do. And it is doing it—with the help of Republic ENDURO Stainless Steel.

During the past decade, ENDURO has shown textile manufacturers how it helps speed production. Its ease of cleaning—usually a single wash and wipe—cuts change time between dye batches, hastens switches in colors. Its inertness to most chemicals protects against contamination, off shades and spotting. Colors in dyed materials are bright and true. And its resistance to corrosion and its toughness lengthen life of equipment—reduce shutdown time for repairs and replacements.

Thank your lucky stars if you have equipment of Republic ENDURO Stainless Steel. It will help you meet the ever-increasing tempo of *Production for Victory.* It will last for years and years. And it will help you keep costs down.

If you don't have ENDURO in your plant, there's no time like the present to write for informative literature.

REPUBLIC STEEL CORPORATION

Alloy Steel Division: Massillon, Ohio
General Offices: Cleveland, Ohio

Berger Manufacturing Division
Culvert Division
Niles Steel Products Division
Steel and Tubes Division
Union Drawn Steel Division
Truscon Steel Company

REPUBLIC STEEL
PRODUCTION FOR VICTORY

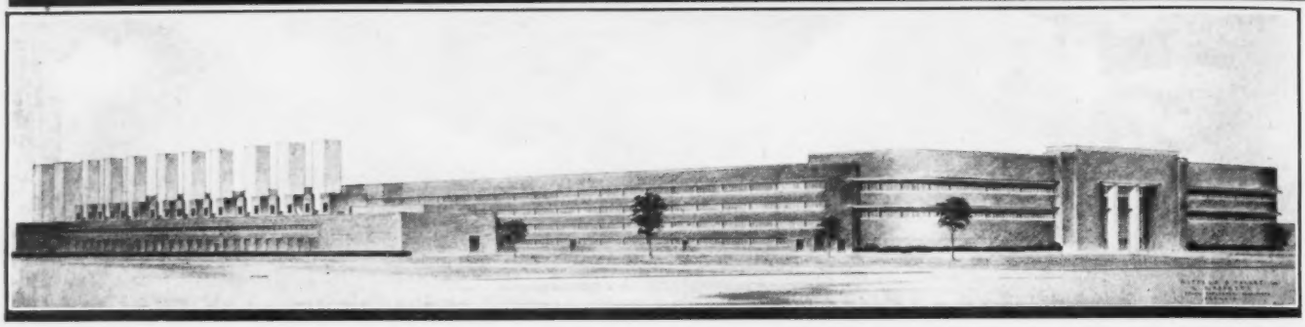
REPUBLIC

Enduro STAINLESS STEEL

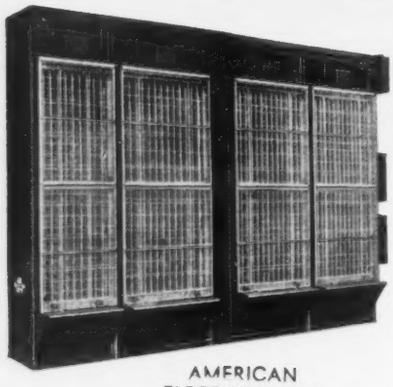
Reg. U. S. Pat. Off.

Other products for the Textile Industry include Toncan Iron Pipe and Sheets—Upson Quality Bolts, Nuts and Rivets—Berger Lockers and Shelving

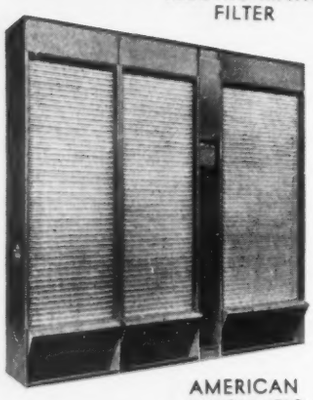
American Air Filters protect men, materials and machines in National Defense Plants



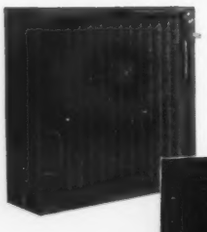
AIRCRAFT BUILDING - FORD MOTOR CO. - TYPICAL OF NEW DEFENSE PLANTS SERVED BY AAF FILTERS



AMERICAN ELECTRO-MATIC FILTER



AMERICAN AUTOMATIC FILTER



AIRMAT DRY FILTER

VISCOUS UNIT FILTER

...wherever production must not be slowed down by destructive DUST, SMOKE, SOOT, or FUMES...

Wherever the countless defense materiel are being made, clean air is playing a vital role in keeping production lines moving at unprecedented speed. Men and women who operate machines must breathe freely of clean wholesome air . . . and those machines must be protected from the ravages of abrasive dust. AAF filtration and dust control equipment delivered to plants engaged directly in making war materials comprises approximately 92% of our output. Bulletins describing in detail the entire line of American Air Filter products are available on request.

•

THE ELECTRO-MATIC FILTER *combines electrical precipitation with automatic air filtration to obtain the highest efficiency in the removal of atmospheric dust and smoke. Widely used in aircraft motor manufacturing plants. Ask for Bulletin No. 250C.*

THE AMERICAN AUTOMATIC FILTER *is completely automatic in its operation, eliminating need of attention and assuring satisfactory performance at all times. Widely used in airplane assembly plants, tank arsenals, etc. Ask for Bulletin No. 241.*

AAF AIRMAT DRY FILTER *uses standard Airmat medium in continuous sheet form furnished in 225 foot rolls. Approved by National Board of Fire Underwriters. Extensively used in ordnance and powder plants. Ask for Bulletin No. 230C.*

PERMANENT WASHABLE VISCOUS UNIT FILTER *for industrial air cleaning where sturdy construction, high efficiency and large dust holding capacity are essential. Widely used for cleaning air supplied to barracks and theatres in army camps and cantonments. Ask for Bulletin No. 201D.*

When writing for Bulletins, please address 303 Central Avenue, Louisville, Kentucky.

Canadian Companies Write
Darling Bros., Ltd., Montreal, P. Q.

TYPICAL TEXTILE MANUFACTURERS NOW USING AMERICAN AIR FILTER EQUIPMENT

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AAF

AMERICAN AIR FILTER COMPANY, INC., LOUISVILLE, KY.

Ask Anyone in Industry!

Photograph shows installation on head end gearing of Whitin spinning frame.

ALEMITE PROGRESSIVE SYSTEM LUBRICATES ALL BEARINGS DEPENDABLY WITHOUT INTERRUPTING PRODUCTION! PROMOTES SAFETY! CUTS COSTS!

SAYS NORTH CAROLINA MILL

Delivers Predetermined Quantity of Grease to Each Bearing—Signals When Finished

WITH all America on a war basis, uninterrupted production becomes more important than ever. This North Carolina mill (name on request) has found that the Alemite Progressive Lubrication System helps to speed production by permitting centralized lubrication of bearings *while machines are in operation!*

This new centralized system saves machine-hours and man-hours. It delivers a predetermined amount of grease to each bearing, and signals when lubrication is completed. It promotes safety by bringing remote bearings into easy reach.

Write today for complete details! Let us show you how easily, quickly, and inexpensively this system can be installed—and how it pays for itself in a short time! No obligation!

ALEMITE
REG. U.S. PAT. OFF.
Industrial LUBRICATION
1888 DIVERSEY PARKWAY, CHICAGO, ILLINOIS • BELLEVILLE, ONTARIO

Another Product of STEWART WARNER

"Keep 'em Flying"!

LUNKENHEIMER VALVES

Are Helping to Build Bombers

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
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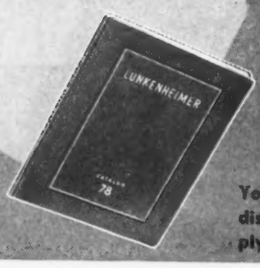
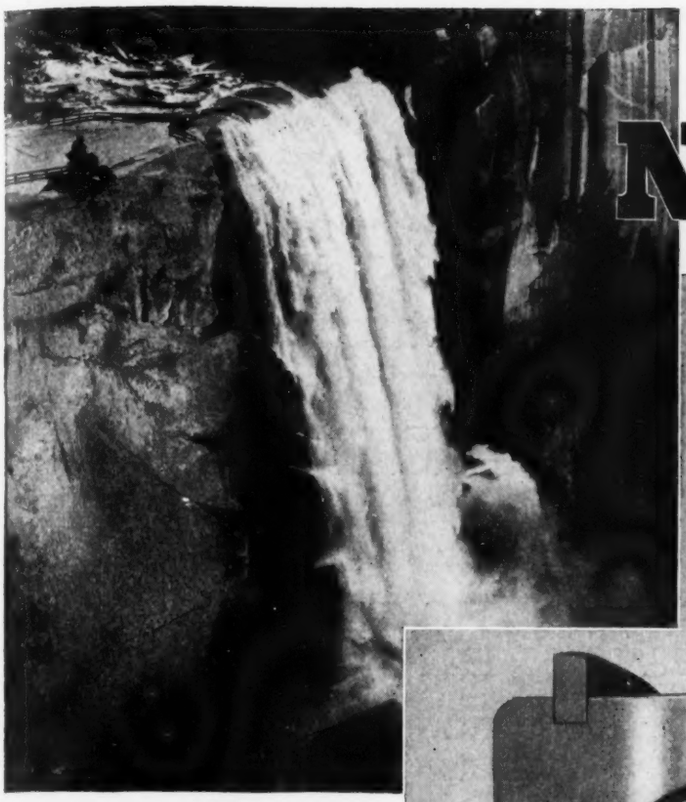
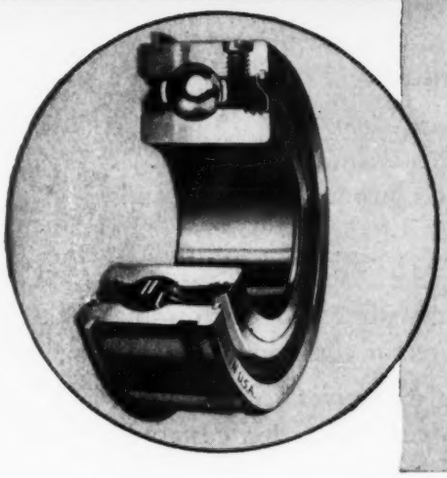
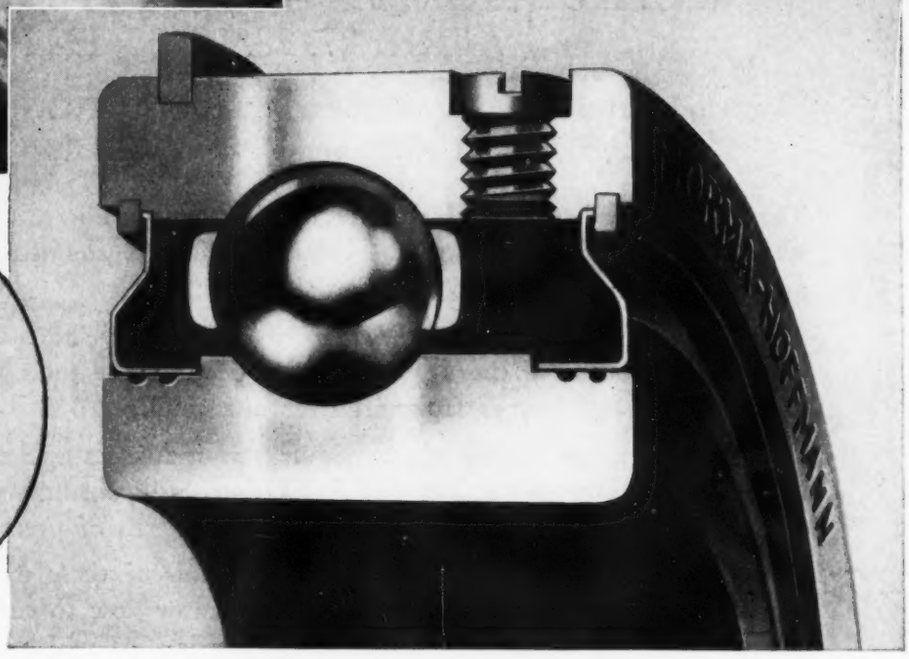


Your Lunkenheimer distributor has a supply. Ask for your copy.



NO *Fear of* GOING DRY!





What water means to the earth, lubricant means to a bearing — life itself. And as the mountain stream provides an abundant and constant flow of water, so the exceedingly large grease capacity of the "CARTRIDGE" BALL BEARING provides constant and abundant lubrication to its raceways and rotating elements.

In the cross-section herewith, note how the DOUBLE-ROW WIDTH GIVES THE "CARTRIDGE" BEARING DOUBLE THE GREASE CAPACITY of the single-row type — guarding against premature dryness. Note also how the in-built metal seals confine the grease WITHIN THE BEARING ITSELF, REGARDLESS OF THE ANGLE OF THE SHAFT.

The "CARTRIDGE" BALL BEARING is equipped with close-fitting, wearless metal shields which, with recessed inner ring construction and two or more grease grooves, form a truly effective labyrinth through which THE GREASE CANNOT PASS AND DIRT CANNOT ENTER.

Adopt the "CARTRIDGE BALL BEARING as your insurance against neglected lubrication, and dirt and grease contamination. It is handled as an integrally sealed unit, needing no supplementary closure parts. It provides easier and quicker assembly and disassembly. It STAYS CLEAN before mounting, during assembly, or when removed, and has convenient regreasing and inspection features.

Write for the Catalog. Let our engineers work with you.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A. • FOUNDED 1911

PRECISION BALL, ROLLER and THRUST BEARINGS

Plan for the FUTURE as well as the Present!

Be Sure to Participate

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APRIL 27, 28, 29, 30, 1942

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The KNITTING ARTS EXHIBITION . . . now in its 38th year of successfully serving the knitting industry . . . has earned the confidence of the entire trade as a most successful method of advertising and selling.

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ALBERT C. RAU *Manager*

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"We express our sincere appreciation of the splendid manner in which you have taken care of our needs, especially so during the last hectic months."

"We want you to know that we appreciate not only the prompt shipment, but also the painstaking care with which you handled the transaction."

"In case an emergency of a similar nature again arises, it is a pleasure to know that we can depend upon co-operation of this kind."

When minutes count ...it pays to call Scully!

Structural material
Plates, various qualities
Floor Plates
Sheets: Hot Rolled, Cold Rolled, Galvanized, etc.
Bars (all shapes): Hot Rolled, Carbon and Alloy grades
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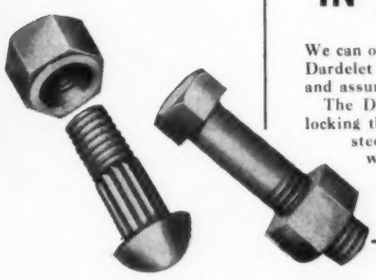
IN STOCK! DARDELET BOLTS



We can offer immediate shipment of both Dardelet Rivet Bolts and Dardelet Machine Bolts. These bolts save valuable time and labor and assure permanently tight bolts.

The Dardelet Rivet Bolt is a ribbed bolt with Dardelet self-locking thread, and is widely used for field erection of structural steel. Has recessed nut. Bolt is driven in and nut is applied with wrench. Economical and strong.

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USS Scully Service

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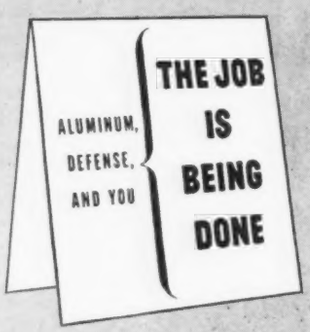
UNITED STATES STEEL

THERE IS NO PRIORITY ON IMAGINEERING



EVERY INDUSTRY, every responsible man in industry, has the present duty of answering two questions.

FIRST ONE IS: Are we, am I personally, doing everything within my power for the war? Our answer here at Alcoa is a plain, unqualified, yes.

NEXT QUESTION IS: What are we doing about the day when we will all need business, which is the polite way of saying, when millions of jobs will be needed for the boys who come back, and for the boys who stayed back to make the weapons.

IMAGINEERING, you know, is the word we have coined to define what we business people have all got to do about the future; about the products we are going to make and the services we are going to be able to offer when this war is over. Imagineering is imagination plus engineering.

HOW DO YOU DO IT? One way would be to figure out, now, how to take advantage of all the aluminum that is going to be available.

QUICKEST WAY TO GET AT IT is to take one of your products or a piece of equipment that "just couldn't" be made of aluminum, and ask yourself, Why not?

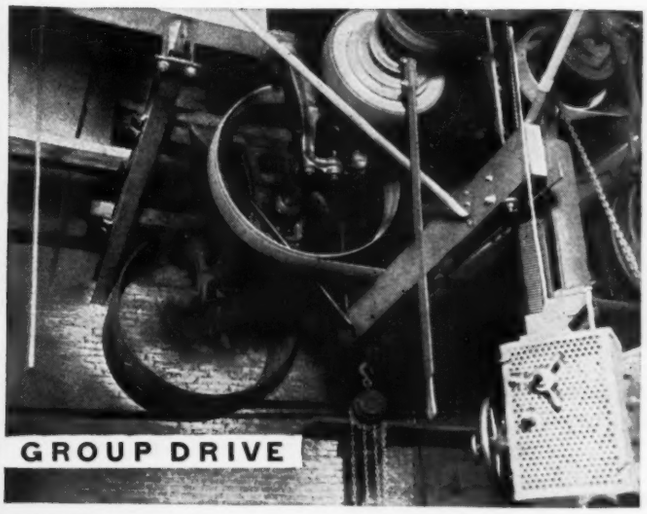
MEANING, OF COURSE, why not light; why not stronger for the same weight; why not resistant to corrosion, and so on, ad infinitum. The first man in any line of business who calls tradition a liar, and things-as-they-are a millstone, is the man who is going places; the man who is going to make peacetime pay rolls.

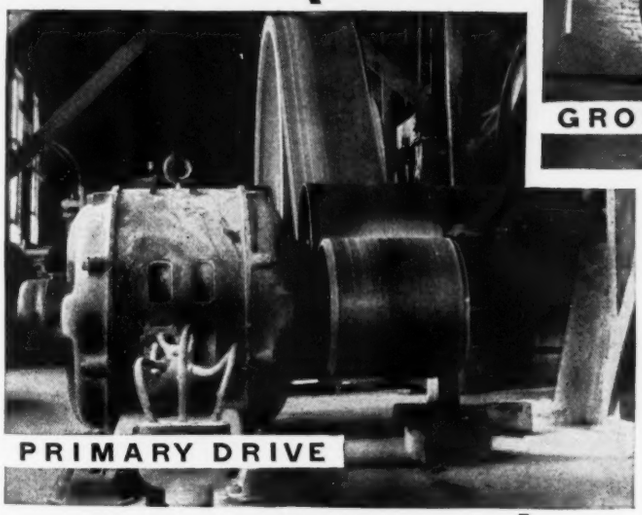
THAT'S IMAGINEERING AT WORK. We've got some ideas here at Alcoa. We're trying to pass them out. We are looking for men who have made themselves receptive by doing some solid Imagineering on their own hook, in their own fields.

Aluminum Company of America, 1942 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

Wood's CAN SUPPLY YOU WITH QUALITY TRANSMISSION EQUIPMENT FOR ANY TYPE OF





Wood's have devoted 84 years to the development and manufacture of better power transmission equipment. Because of this long experience, Wood's is better able to serve the extraordinary demands of industry today as well as in normal times.

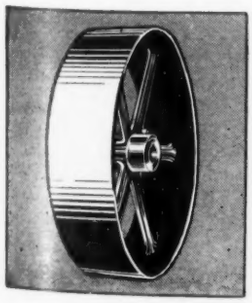
For the performance you want in transmission—economy, efficiency, long life—consult Wood's.

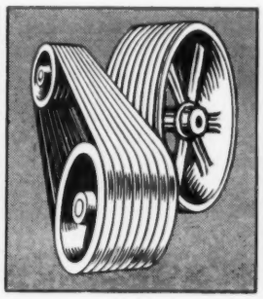
EVERYTHING IN TRANSMISSION

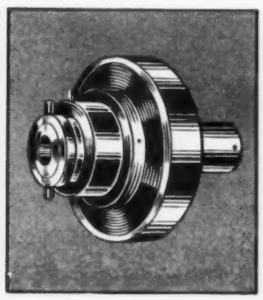
Bearings—Collars—Clutches—Couplings—Contactors—Hangers
Pillow Blocks—Pulleys—V-Belt Sheaves and Complete Drives

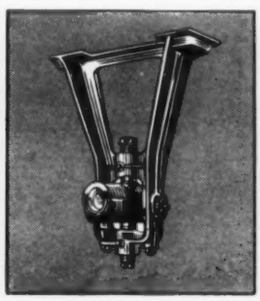
T. B. Wood's SONS CO.
CHAMBERSBURG, PA.

Wood's
LONG LIFE LINE









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Why your Red Cross urgently needs

FIFTY MILLION DOLLARS, NOW

How the fund is allocated . . . What it does in service

Every dollar that you give now to your Red Cross marches into the thick of things where humanitarian help is needed most—up to the fronts and battle stations where the fighting is heaviest. Into the Red Cross hospitals and First Aid units where prompt medical attention and supplies may save innumerable lives. And throughout our broad land to train and equip volunteers to meet any emergency that may strike.

How the $50,000,000 War Fund is Used

SERVICE TO THE ARMED FORCES • • • • • • $25,000,000

Provides for the care, welfare and morale of the Army and Navy, including services to men in hospitals and during convalescence. • Provides an important link between the service men and their families; keeps the families from breaking up, supplies food, shelter, medicine, and even jobs where necessary. • Provides essential medical and other supplies outside of standard Government equipment. • Operates Red Cross headquarters at camps and naval stations. • Enrolls blood donors and medical technologists for Army and Navy needs. • Provides millions of surgical dressings, sweaters, socks, etc. through volunteer workers.

DISASTER AND CIVILIAN EMERGENCY RELIEF • $10,000,000

Supplies emergency needs for food, clothing, shelter and medical attention for disaster victims. • Assists stricken families in repair of homes and other adjustments; provides minimum reserves of essential relief supplies to prevent unnecessary delays.

CIVILIAN DEFENSE SERVICES • • • • • • • • $ 5,000,000

Trains volunteers for home nursing and nurses' aides. • Trains nurses, men and women, for active duty with the Army and Navy. • Trains volunteers in First Aid and accident prevention. • Trains volunteers for work in Motor Corps, Canteen and Production. • Instructs men, women and children in preparedness against explosive and incendiary bombs. • Organizes for evacuation of children and their families from stricken areas. • Assists Red Cross Chapters in establishing effective coordination of emergency relief with local and State defense authorities.

SERVICE AND ASSISTANCE THROUGH CHAPTERS • $ 4,000,000

Gives assistance and service to the 3,740 Red Cross Chapters with their 6,131 Branches responsible for local Red Cross activities, particularly welfare work among the service men and their families.

OTHER ACTIVITIES AND CONTINGENCIES • • • $ 6,000,000

Provides for unforeseen expansions in program and for new activities made necessary by unexpected developments.

TOTAL • • • • • • • • • • • • • • • • • $50,000,000

THE AMERICAN RED CROSS $50,000,000 WAR FUND

Note to Red Cross Canvassers: Use the material on this page to better inform contributors how their donations are being expended.

This space contributed to The American Red Cross by TEXTILE WORLD

PERKINS AUTOMATIC BIN PILERS

PATENTED

You cannot afford to pile by hand

B. F. PERKINS & SON, Inc.

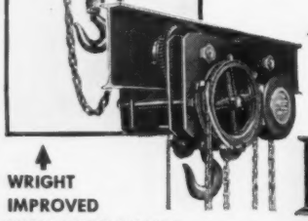
ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

The WRIGHT *Line*
FOR HIGH SPEED PRODUCTION

There is a *Wright* hoist for every job —the **WRIGHT SPEEDWAY ELECTRIC HOIST,** the **WRIGHT IMPROVED HIGH SPEED HAND-OPERATED HOIST,** the **WRIGHT TRAVELING CRANE, JIB CRANE, MONORAIL TROLLEY.** They handle anything from ¼ to 50 tons—*fast,* safely, economically.

But you get more than the hoist fitted exactly to your needs. *First*—you get the Wright engineering experience which assures you the most economical solution of your problem with the **WRIGHT HOIST.** *Second*—you get inbuilt safety in every part. The load chain, for instance, has a safety factor of 7 to 1. The bottom hook slowly opens to indicate overload.



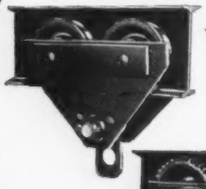
← HI-WAY LOW HEADROOM TROLLEY HOISTS

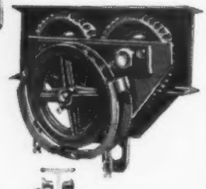
WRIGHT TIMKEN TAPERED ROLLER-BEARING TROLLEY

← PLAIN

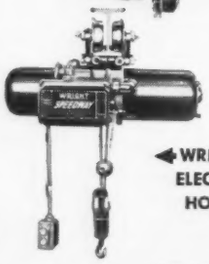
GEARED →

↑ WRIGHT IMPROVED HIGH SPEED HOISTS



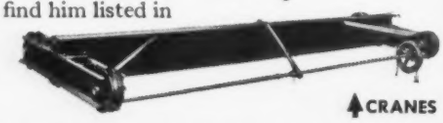


This drop forged, special steel hook, possesses such an unusual degree of ductility it will straighten out before any part of the hoist is damaged. *Third*—assured operating efficiency is a characteristic of every **WRIGHT HOIST.** Their action is smooth, positive, fast. Finally—Wright gives you year-in-and-year-out dependability and the very minimum of maintenance cost.



← WRIGHT ELECTRIC HOISTS

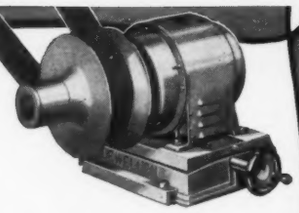
Let Wright engineer your hoisting and crane problems. Work through the Wright distributor in your city. You'll find him listed in the classified telephone book.



↑ CRANES

WRIGHT MANUFACTURING DIVISION
YORK, PENNSYLVANIA
In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, INC.
BRIDGEPORT, CONNECTICUT

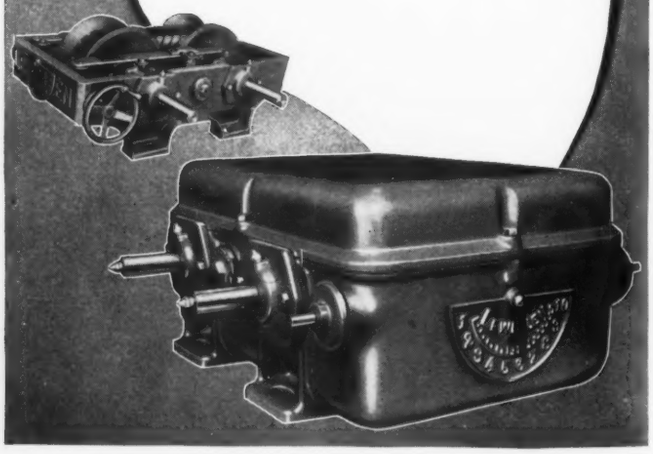


Controlled FULL SPEED AHEAD

TRUE ENOUGH, the watchword of the hour is SPEED. But, actually, machine speed must be controlled efficiently to step up production. This is a fundamental fact—proved today more than ever before. Thus, Lewellen Variable Speed Transmissions, Variable Speed Motor Pulleys and Automatic Controls assume a top role in providing a complete system of production control and regulation to our nation's industries. Lewellen engineers are constantly finding ways to adapt new applications of variable speed control to fixed-speed machines and to hundreds of machines using inefficient speed-control methods. Our engineers are specialists. We have no side-lines—no other interests than to help you solve your speed-control problems.

Call a Lewellen Representative or write us direct

LEWELLEN MANUFACTURING CO.
COLUMBUS, INDIANA



8 METALS THAT LICK 1000 CORROSIVE JOBS

One or more of the INCO family of metals are currently being used for:

WATERS, such as—distilled, fresh, brackish, sea and effluent.

NEUTRAL and ALKALINE SALTS, such as—chlorides, carbonates, sulfates, nitrates and acetates.

ACID SALTS, such as—zinc chloride, ammonium sulfate, magnesium chloride, aluminum sulfate, and ammonium chloride.

OXIDIZING ACID SALTS, such as—silver nitrate solution, chromates, permanganates, nitrates.

MINERAL ACIDS, such as—sulfuric, hydrochloric, hydrofluoric, and pure phosphoric.

ORGANIC ACIDS, such as—stearic, oleic, linoleic, citric, tartaric and malic.

ALKALIES, such as—caustic soda, caustic potash, soda ash, and anhydrous ammonia.

DRY GASES, All common gases including chlorine.

INDUSTRIAL ATMOSPHERES

STEAM, wet and dry, and all mixtures of steam, air and carbon dioxide.

BRINES, natural deep well and prepared.

INCO Nickel Alloys meet severe conditions of service . . . prove worthy allies in war or peace

You doubtless know that Monel, Nickel and Inconel have for years been successfully employed against a wide variety of corrosives. But do you know that *newer* members developed in recent years have vastly increased the usefulness of this family of metals?

By selecting the right INCO Nickel Alloy you can now get the desired combination of chemical and mechanical properties for almost any type of corrosive job. Furthermore, other important properties offered by these new alloys meet a wide range of fabrication and physical requirements other than corrosion.

MECHANICAL PROPERTIES of INCO NICKEL ALLOYS

All of these corrosion-resistant metals possess outstanding qualities of strength, toughness, wear resistance, and fabrication. In addition, individual alloys are characterized by anti-galling and anti-sparking properties, resistance to elevated temperatures, amenability to heat treatment, exceptional resilience, and magnetic properties ranging from definitely magnetic to non-magnetic.

With the Nation at war, supplies of Monel, Nickel and INCO Nickel Alloys are needed for war production and for meeting the needs of our armed forces. The International Nickel Company will continue to present information for the benefit of metal users who are working for victory and planning for the future. Let us help you determine the proper INCO Nickel Alloy to use. For full information on these metals write for technical literature. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York, N. Y.

INCO NICKEL ALLOYS ARE YOUR ALLIES

MONEL • "K" MONEL • "S" MONEL • "R" MONEL • "KR" MONEL • INCONEL • NICKEL • "Z" NICKEL

Sheet . . . Strip . . . Rod . . . Tubing . . . Wire . . . Castings

THE SEAL OF QUALITY AND SERVICE SINCE 1857

US

HIT *the nail* *on the* HEAD

THERE is no time to miss any opportunity to insure fast, efficient production. US bobbins, shuttles, cones and spools have proved their superiority to stand the strain of heavy production schedules.

All US products are made from the very best materials; they are produced by skilled artisans and all bear our trademark which is your guarantee of satisfactory performance.

Ask for samples of US products

SATISFACTION GUARANTEED

US BOBBIN & SHUTTLE CO

LAWRENCE, MASS.

PROVIDENCE, R. I. GREENVILLE, S. C.
JOHNSON CITY, TENN. CHARLOTTE, N. C.

CHICAGO AGENT: Albert R. Breen, 20 E. Jackson Blvd.
CANADIAN AGENT: W. J. Westaway, Montreal
ALABAMA AGENT: Young & Vann Supply Co., Birmingham

WARP COMPRESSING MACHINE CO.

Established 1895

WORCESTER, MASS., U. S. A.

Originators and Developers of

Wool and Worsted

WARP COMPRESSORS for wool warps
WARP COMPRESSORS for slashers
WOOL BEAMERS
DUPLEX BEAMERS
DRY DRESSING FRAMES
JACK SPOOL CREELS
COMPRESSING SPOOLERS standard
COMPRESSING SPOOLERS Hi-speed
MULTIPLE SPOOLERS
MAGAZINE CREELS Hi-speed for spinning frame bobbins and cones
BEAMING HEAD and COMPRESSOR for papermakers felts

Carpet

BEAMING HEAD and COMPRESSOR for sizing machines
WARPER CREELS for sizing machines
BEAMING HEAD AND COMPRESSOR for wool warps
DIRECT BEAMING OUTFIT for Axminster and unsized warps
WARPER CREELS for weaving-direct for Wilton looms

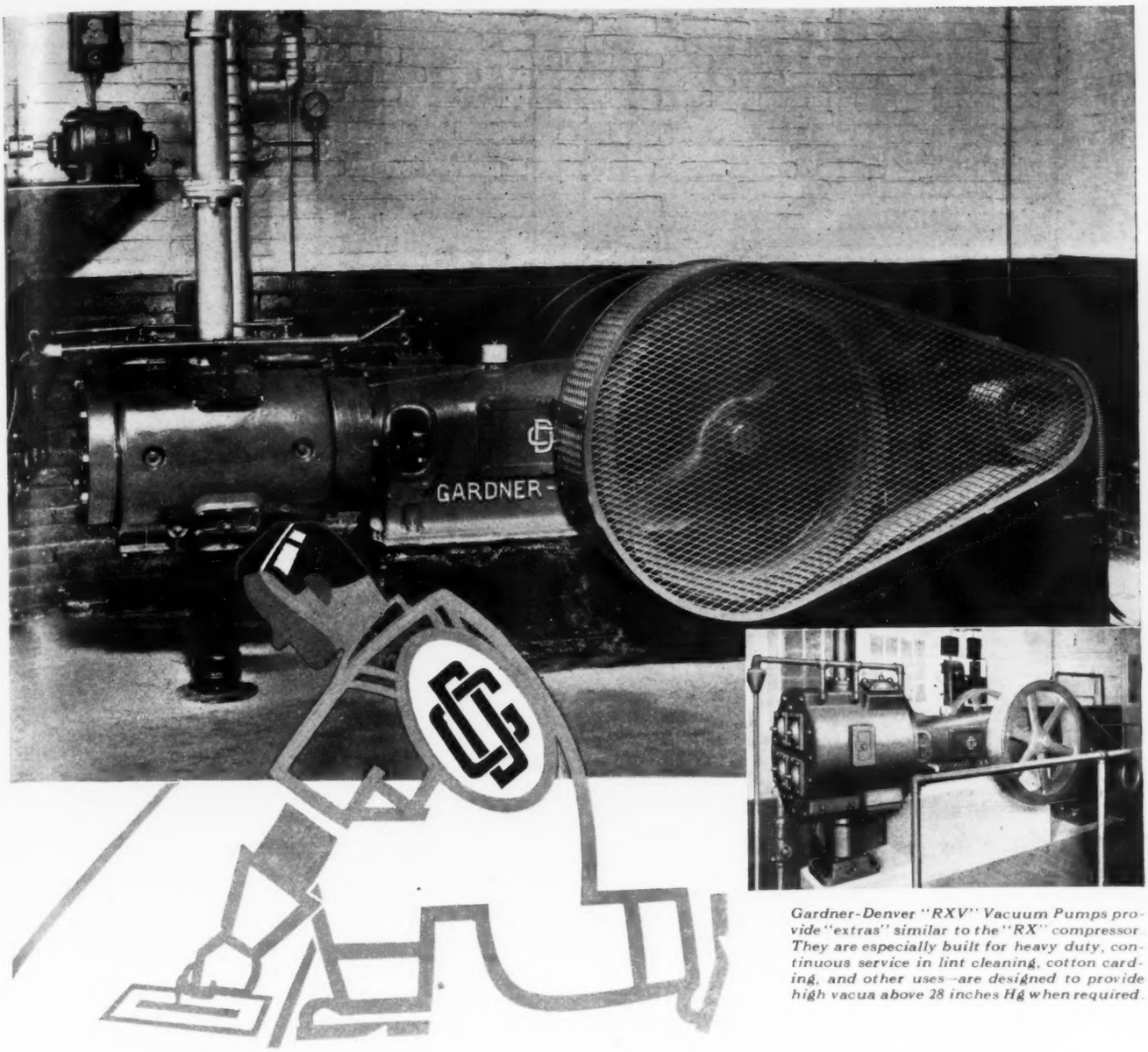
Rayon

MAGAZINE WARPER CREELS for cones, tubes and spools
SINGLE END WARPER CREELS for cones, tubes and spools

Cotton

WARPER CREELS for twister spools and packages
DIRECT BEAMING OUTFITS for unsized warps
All kinds of Creels for all classes of work

HIGHER SPEED
UNIFORMITY OF TENSION
BETTER WARPING
DECREASED COSTS



Gardner-Denver "RXV" Vacuum Pumps provide "extras" similar to the "RX" compressor. They are especially built for heavy duty, continuous service in lint cleaning, cotton carding, and other uses—are designed to provide high vacua above 28 inches Hg when required.

Smoothing the Course of All-Out Production

IT'S an all-out effort today for the textile industries—an effort that demands equipment capable of giving the vital *extra* ounce of service. The extra factors of Gardner-Denver "RX" Single-Stage Horizontal Air Compressors assure greater air capacity while horsepower requirements remain unusually low. These machines are designed and built for today's production problems. For the complete specifications on Gardner-Denver "RX" Air Compressors, write Gardner-Denver Company, Quincy, Ill.

The "RX" Provides These Features You'll Like:

1. Long service assured by rugged, dirt-free construction.
2. Increased efficiency due to large and unrestricted valve and port areas and extra large water jackets.
3. Air output automatically regulated to fit air needs.
4. "Air-Cushioned," silent Duo-Plate valves that actually become tighter with use.
5. Capacities from 89 to 1292 cu. ft. displacement per minute.
6. Easily adapted to any type of drive.

Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER PRODUCTS HELP SPEED ICTORY

GARDNER-DENVER *Since 1859*

DAY

NIGHT

Light-proof ROOF VENTILATOR READY FOR BLACKOUT

1 Low height—streamlined appearance.

2 Guaranteed performance independent of wind and gravity.

3 Hinged top gives easy access to motor fan and shutter.

1 No light shows through. Ready for blackout without special treatment.

2 Non-overloading power characteristic assures trouble-free operation.

3 Harmonizes with modern plant design.

DeBothezat

FREE Detailed information on Light-proof Roof Ventilators. *WRITE TODAY.*

VENTILATING EQUIPMENT DIVISION ★ American Machine and Metals, Inc., East Moline, Illinois

"Perfection in spinning can be most nearly obtained by using"

"THE DARY TRAVELER"

The Dary Ring Traveler Company has been in business for more than 41 years and has been constantly improving the methods of manufacturing High Speed Travelers, until today we are able to produce Travelers of a guaranteed weight, temper and style. Dary Travelers are made from a specially drawn stock by skilled workmen with years of experience. It is the Dary Process with diligent watch over every detail and the co-operation of our customers that has enabled us to manufacture a Traveler that is unequalled.

The Dary Ring Traveler Company, Taunton, Mass.

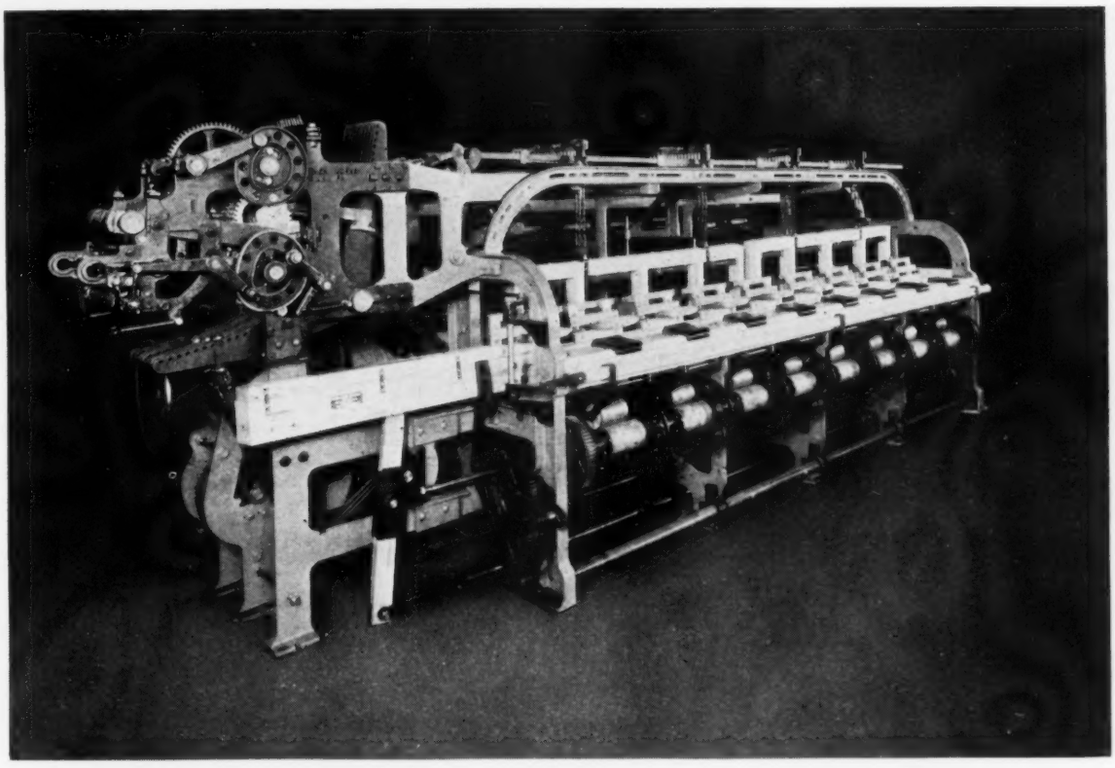
Southern Representatives
John E. Humphries, Greenville, S. C.—Box 843
John H. O'Neill, Atlanta, Ga.—Box 720
H. Reid Lockman, Spartanburg, S. C.—Box 515

B. G. Dary, *Treasurer*

"WAR"

means "webbing"

MACHINE GUN WEBBING • GAS MASK WEBBING • GUN SLING WEBBING • PARACHUTE WEBBING



FLETCHER "VICTORY" LOOM

especially designed for weaving the webbing requirements of modern war.

This loom will consistently produce *quality* webbing in *quantity*. It will stand the strain of a 168 hour week. It is worthy of your investigation.

FLETCHER WORKS • Glenwood Ave., & Second Sts.

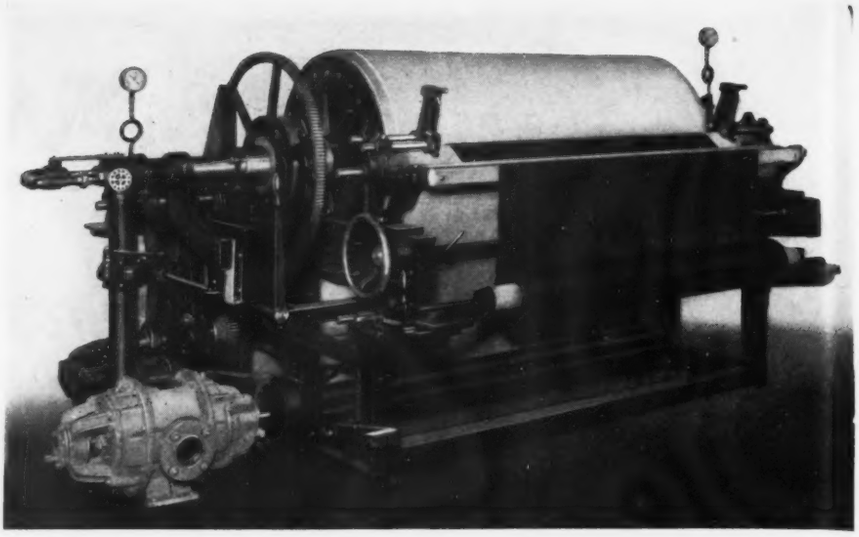
Philadelphia, Pennsylvania

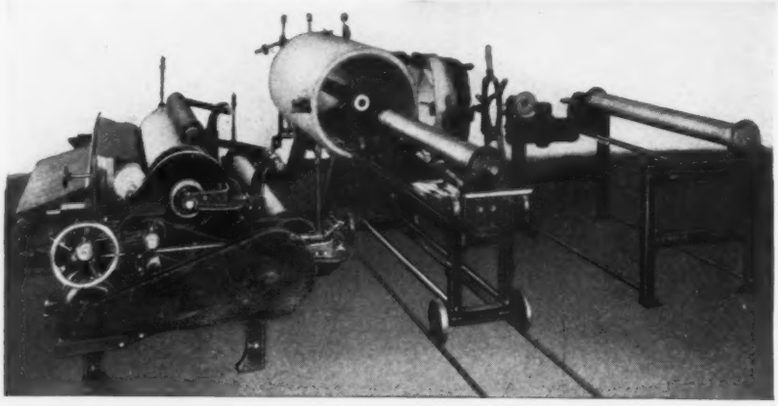
—"webbing" means

FLETCHER

Improved Decating

Both the full or closed type, and the open or semi-decating type of Gessner's Decating Machines include the most modern improvements to increase the speed of decating operations. Style, fit, and draping qualities of wool, worsted and rayon fabrics, which depend upon the finish, the handle, or bloom are better assured with cloth finished on Gessner decating equipment.





IMPROVED CLOTH FINISHING MACHINERY

VACUUM EXTRACTORS, GIGS, SCUTCHING MACHINES, SPOT PROOFING MACHINES, BRUSHES, DECATING MACHINES, PRESSES, DECATING APRONS, NAPPERS

DAVID GESSNER *Company*

Worcester, Massachusetts

FOR WEAVING GOVERNMENT CLOTH

The Best Results Are Obtained By Using Our

McCANN & STUER PATENT 3, 4 OR 5 SHUTTLE MIX

Single Pick Automatic Loom Attachment

SUPREME FOR MIXING THE FILLING OR WEFT, THEREBY MAKING BETTER CLOTH, NO ADDED WORKING PARTS TO LOOMS SUCH AS GEARS, CAMS, LEVERS, PUMP RODS, SHAFTS, ETC., ARE ADDED TO THE LOOMS IN THE INSTALLATION OF SAME. MAKING IT THE SIMPLEST AND EASIEST TO OPERATE.

THE ONLY MOVEMENT ON THIS ATTACHMENT IS WHEN A TRANSFER IS MADE OF A FULL BOBBIN TO REPLACE THE EMPTY BOBBIN IN THE SHUTTLE.

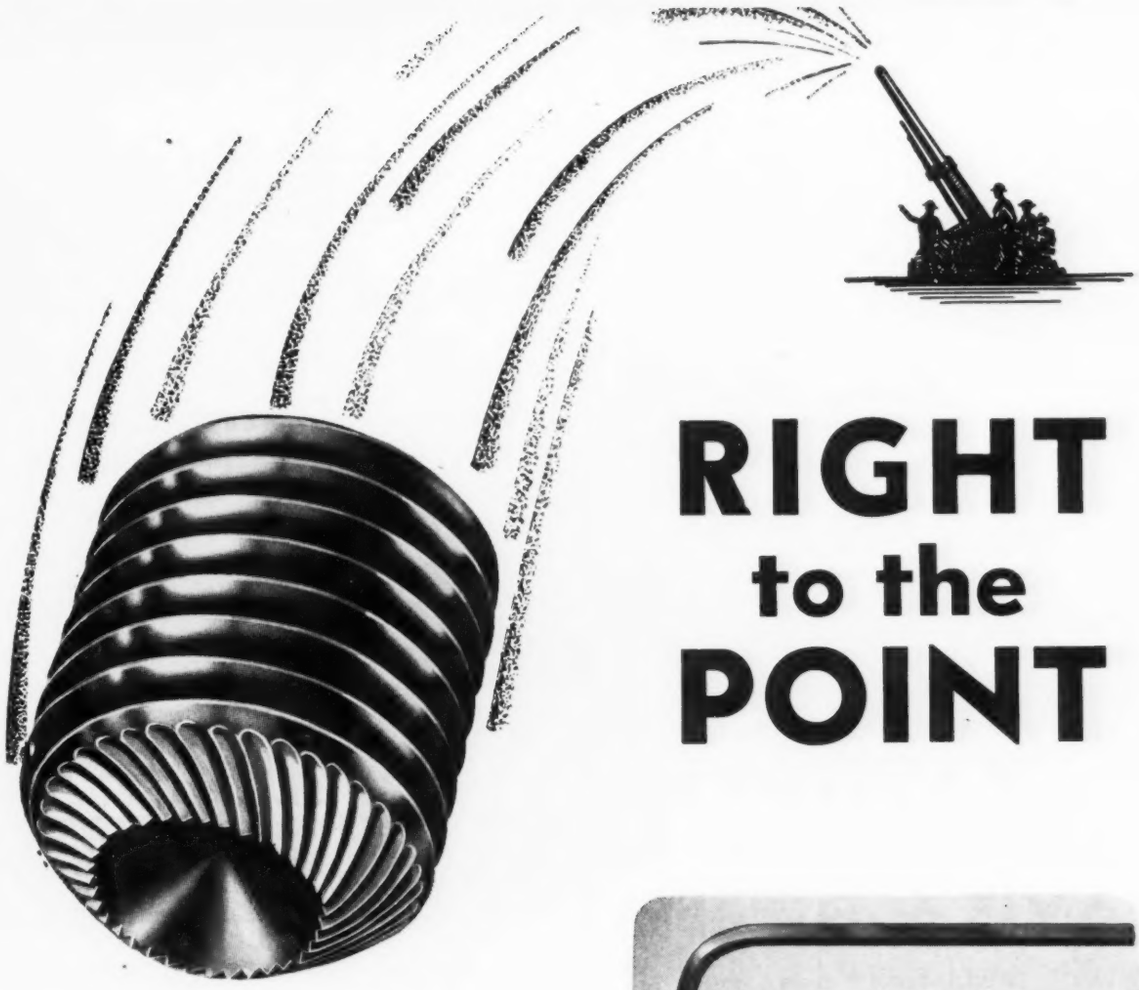
PATENTED PROTECTION DEVICES AGAINST MAKING SMASHES, BREAKAGES AND BAD DOFFS. THESE DEVICES ARE ALSO STATIONARY AND OPERATE ONLY WHEN A SHUTTLE OR A BOBBIN IS NOT IN LINE WITH THE MAGAZINE AT THE TIME OF TRANSFER.

MADE FOR BOTH RIGHT AND LEFT HAND LOOMS, EQUAL OR 2 IN 1 GEARED

SAME MAY BE SEEN IN ACTUAL OPERATION AT OUR PLANT.

Harry Stephenson, McCann & Stuer Division

RIVER WORKS **ANDOVER, MASS.**



RIGHT to the POINT

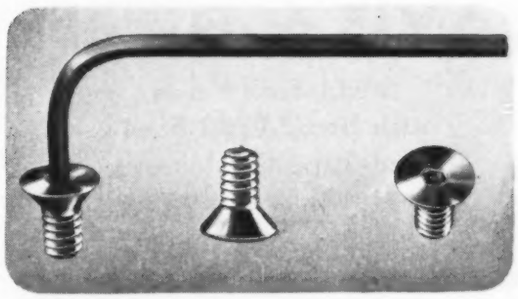
YES, sir, "Unbrako" Self-Lockers get right to the point with a point . . . KNURLED point, to be exact!

Their operation is simple: just tighten up as usual and the KNURLED points dig in for the duration . . . stay locked no matter how severe the vibration or number of applications.

So unfailingly do "Unbrako" Self-Lockers *stay set* that some of the largest textile mills are using them exclusively.

A sample order will convince you . . . try it!

• The KNURLING of Socket Screws originated with "UNBRAKO" years ago.



"UNBRAKO" WELT BAR SCREWS

Uniformly strong and accurate, "UNBRAKO" Welt Bar Screws insure extra satisfaction in many a mill. Ask for samples of these too.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 571

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

Erecting SIMPLEX Frames before Shipment to Mills

The Woolen Industry's OUTSTANDING MACHINERY VALUES

DAVIS & FURBER

60x60-Inch Cards
with Broad-Band Feed
and Tape Condenser

DAVIS & FURBER SIMPLEX

Woolen Spinning Frames
which put
500 to 1,000%
more yarn on bobbins

To speed up deliveries we are running our machine tool department three shifts.

DAVIS & FURBER

North Andover, Mass.

Model
4-T-Y-C
Productimeter

Speed Defense Production!

Install PRODUCTIMETERS for Accurate, Economical Production Control

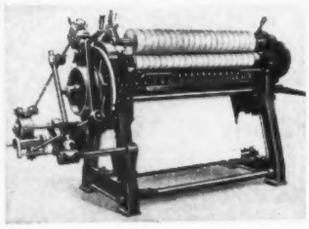
Braiders	Doubling	Looms	Spoolers
Brushes	Driers	Nappers	Spinning
Calenders	Folders	Printing	Tenters
Coating	Gigs	Reelers	Twisters
Combing	Inspecting	Shears	Warpers
Drawing			Winding

There's a Productimeter for every Textile Machine. Custom-built models for special purposes can be designed for your requirements. Send for Textile Catalogs today!

Pick Counters No. 5 **Predetermined**
Yardage Counters No. 6 **Counters No. 15**
Rotary Counters No. 8

DURANT MANUFACTURING CO.
1931 N. Buffum Street, Milwaukee, Wis.
179 Eddy Street, Providence, R. I.

Corset Tapes Accurately Cut



A well-known manufacturer of corsets says:

"The CAMACHINE purchased from you several years ago has been one of our most profitable investments in equipment.

"The absolute accuracy in cutting our strippings and linings on this machine has given us much greater efficiency, and the problem of waste has practically been eliminated. We have had little expense in the twelve years the machine has been in operation."

WRITE FOR INTERESTING FOLDER

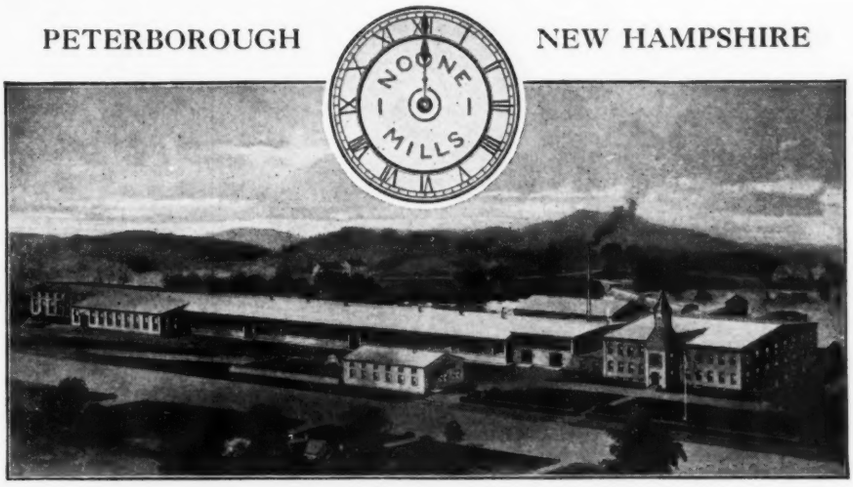
CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn, New York

CAMACHINE

The Joseph Noone's Sons Company

A. Erland Goyette, Owner

PETERBOROUGH NEW HAMPSHIRE



Established 1831

Noone's Standard Roller Cloths

Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and Leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

WILLIAM R. NOONE & COMPANY

Selling Agents

ARNOLD T. MALONE, Manager

105 Washington Street Boston, Mass

on industrial patrol duty ★★★★

Just as important as the planes that watch our shores, are the eyes of Science that watch our Industrial front. The United States Testing Company, Inc., is now engaged in testing many materials for national defense . . . including flare cloths, uniform fabrics, canvas, sand bags, zippers, parachute material, chemicals, blackout materials, and many others.

★

UNITED STATES TESTING COMPANY, INC.

ESTABLISHED 1880

HOBOKEN, NEW JERSEY

NEW YORK • PHILADELPHIA • GREENSBORO • WOONSOCKET • CHICAGO

Sterling Ring Travelers

VICTORY

Find out under what Priority Rating your final or completed product is being made. Don't hoard Travelers, try to anticipate your requirements; Don't forget that we have to get supplies to make Travelers.

Southern Representatives

GEORGE W. WALKER
Box 1894 Greenville, S. C.
D. J. QUILLEN
Box 443 Spartanburg, S. C.
SOUTHWEST SUPPLY CO.
Box 236 Itasca, Texas

STERLING RING TRAVELER CO.
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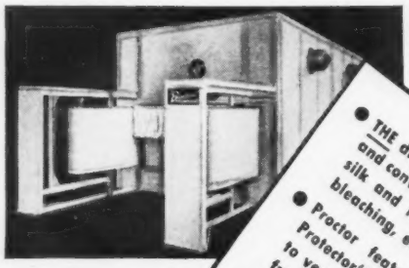

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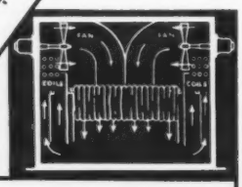

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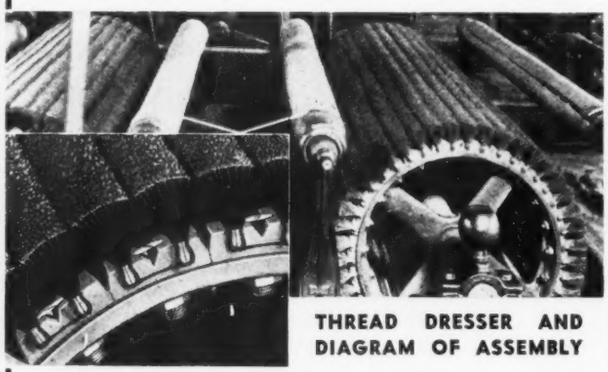

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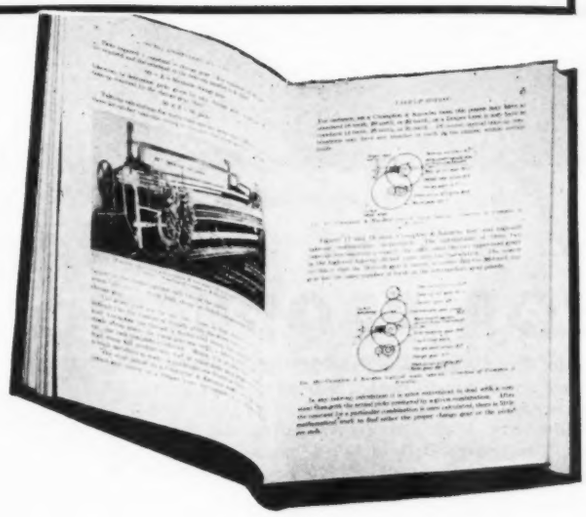
How to adjust, maintain, and repair cotton looms

This book brings you step-by-step, clear, practical instructions on all phases of cotton loomfixing. The material is so presented that the book can serve as a textbook for courses in loomfixing or as a self-study manual for those who wish to learn the art of loomfixing or who wish to improve their knowledge and skill.



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COTTON LOOMFIXERS' MANUAL

By IVAR MOBERG

Instructor in Weaving, Loomfixing, and Designing, Nashua Manufacturing Company; Instructor at Lowell Textile School

197 pages, 6 x 9, 108 illustrations, $2.50

"ANY PERSON who is mechanically inclined and who wishes to learn, or to improve himself in, the art of loomfixing, can do so by carefully studying and following the instructions given in this book."

The book gives a complete course on how to adjust, maintain, and repair cotton looms. As an illustration of the thoroughness of the treatment, take the chapter on Harness Motions. It describes the five steps in setting and adjusting the under-cam motion, then takes up the use of auxiliary camshafts, explains the setting of the Lacey motion, and gives step-by-step the correct procedure for setting a spring top. The following pages then give the four steps in setting side-cam harness motions and explains how to calculate the correct driving gear for various cams, and how to build up a set of under cams in accordance with a cam draft. Next comes an explanation of how to set and adjust dobbies, how to mount harnesses in dobby-equipped looms, how to fix head motions, how to use Jackquards, how to obtain correct shed height. Three pages are then devoted to tape-selvage motions because these are so closely related to harness motions. The chapter closes with a description of the 11 defects caused by faulty harness motions and practical suggestions for preventing these defects. Every one of the 17 chapters in the book is similarly detailed, practical, and thorough.

Bringing you

detailed instructions on the practical setting, adjusting, and timing of modern looms, and the latest loom motions applied on older looms.

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1. Loom Construction
2. Take-up Motions
3. Loom-driving and Brake Motions
4. Letoff Motions
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6. Picking Motions
7. Warp Stop Motions
8. Filling Stop Motions
9. Protector Motions
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—the listing of the defects caused by faulty automatic filling motions and the suggestions for preventing these defects

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—the procedure for reconditioning and setting used Draper three-bank warp stop motions

—the directions for setting and adjusting a filling cutter

—the shuttle rules for loomfixers, etc., etc.

Ivar Moberg is well known in the cotton loomfixing field. Once superintendent of one of the largest mills in Sweden, then 21 years with the Boott Mills in various executive capacities, now instructor in weaving, loomfixing and designing at the Nashua Manufacturing Company, he knows loomfixing and how to teach it.

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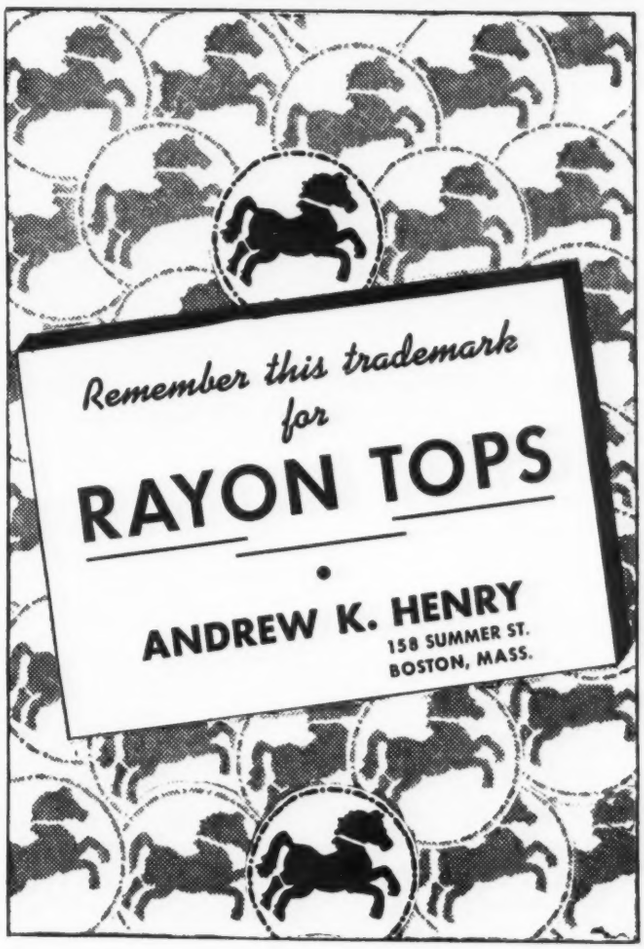

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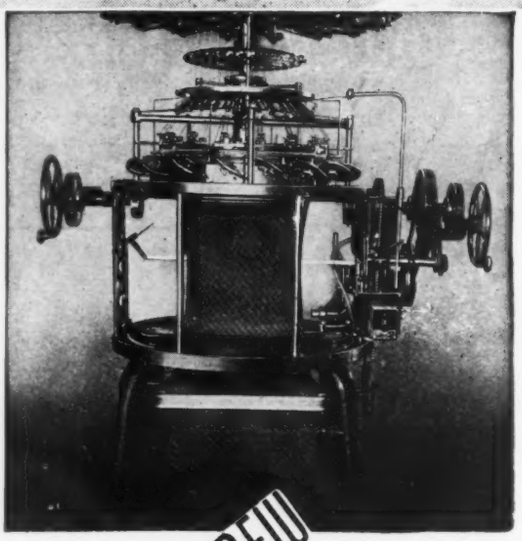

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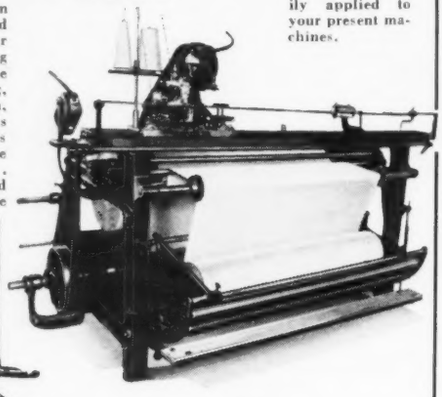

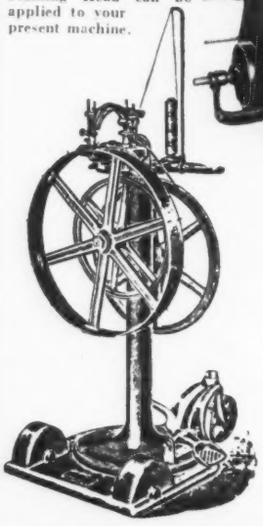

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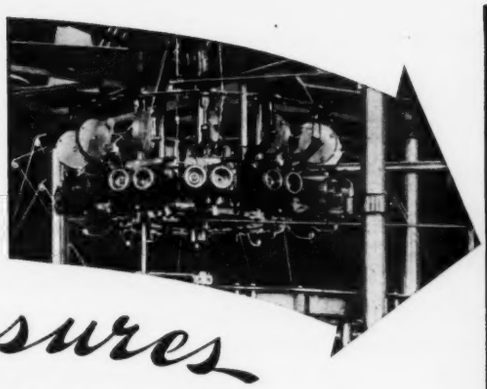

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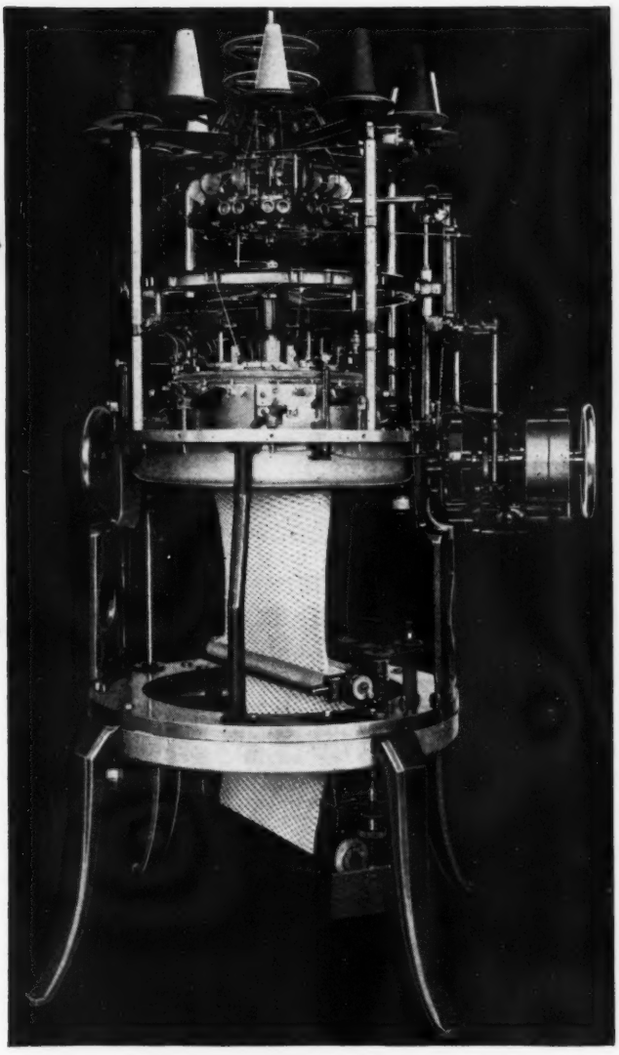

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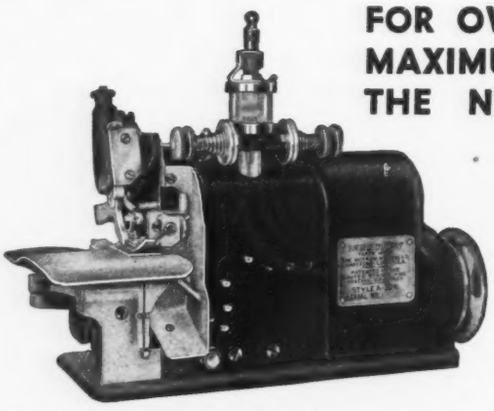

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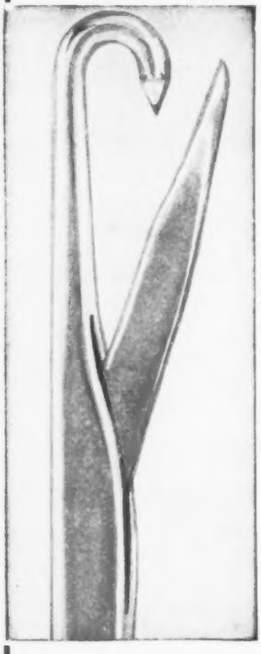

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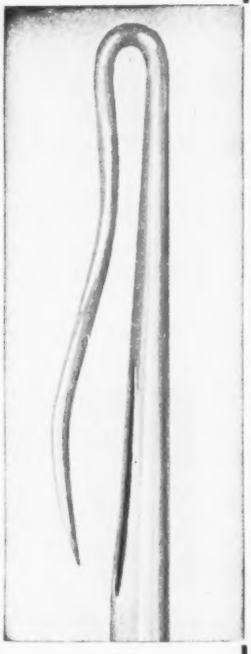

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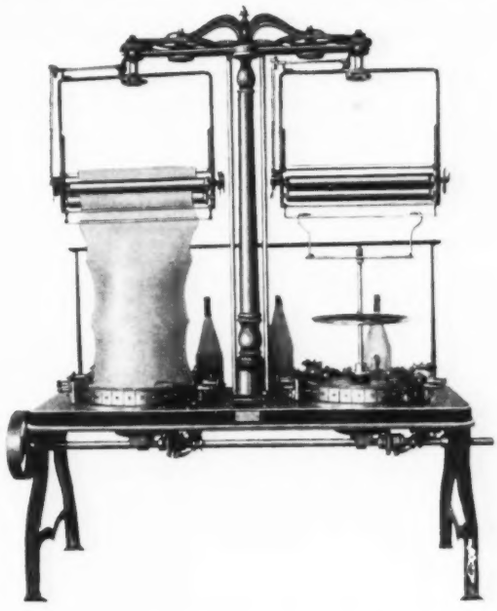

Our Spring Needle Underwear Machine with Automatic Take-up is shown here. This machine is made in sizes from 12 in. to 36 in. in diameter for the production of a great variety of fabrics of any desired gauge, the number of feeds depending on the size of the cylinders. Aside from the feeds for plain fabrics the stockinet, eiderdown and astrachan feeds are superior to any on the market.

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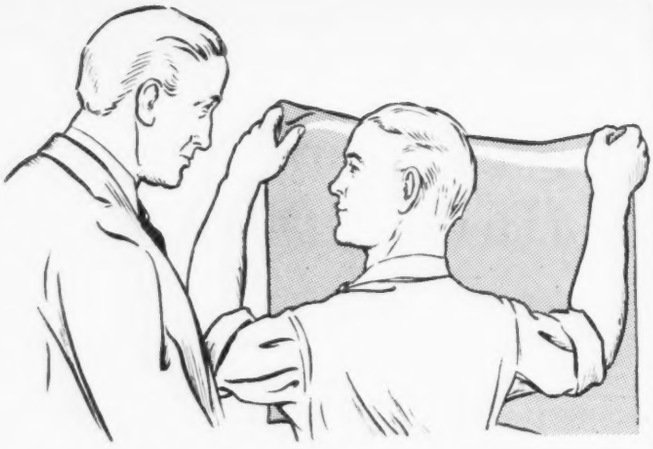

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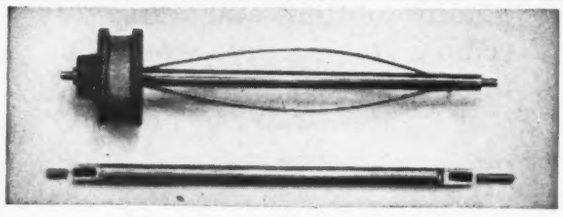

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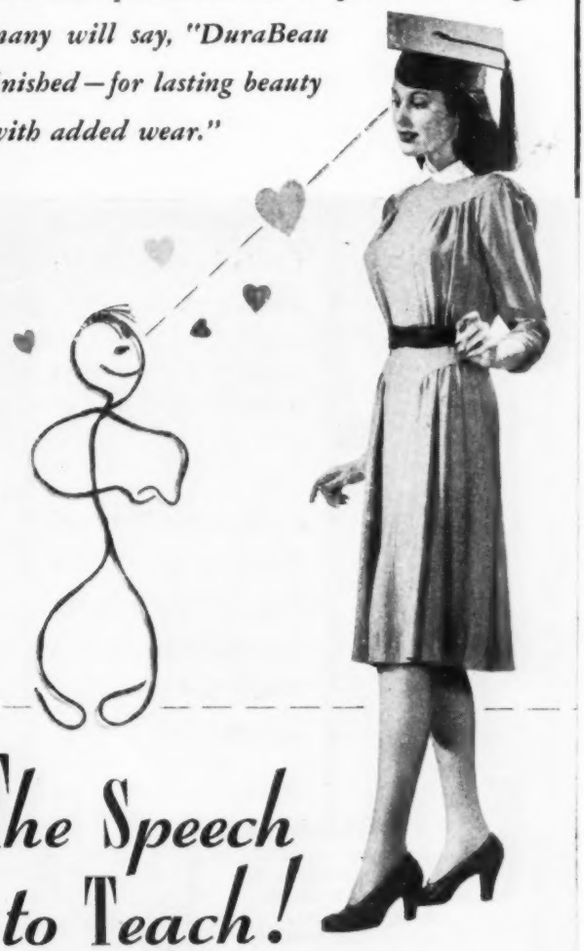

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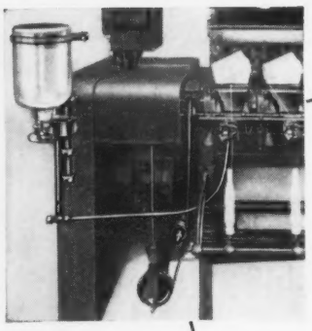

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for NYLON Yarn

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TEXTILE WORLD ANNUAL

FEBRUARY, 1942

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POWER GENERATING EQUIPMENT • ELECTRIC MOTORS
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SPECIAL SERVICES TO THE TEXTILE INDUSTRY

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And you who have idle machines on your floors, and have been retaining them for possible future use – we ask you in the interests of maximum production to make them available to mills sorely needing them now – to Win this War.

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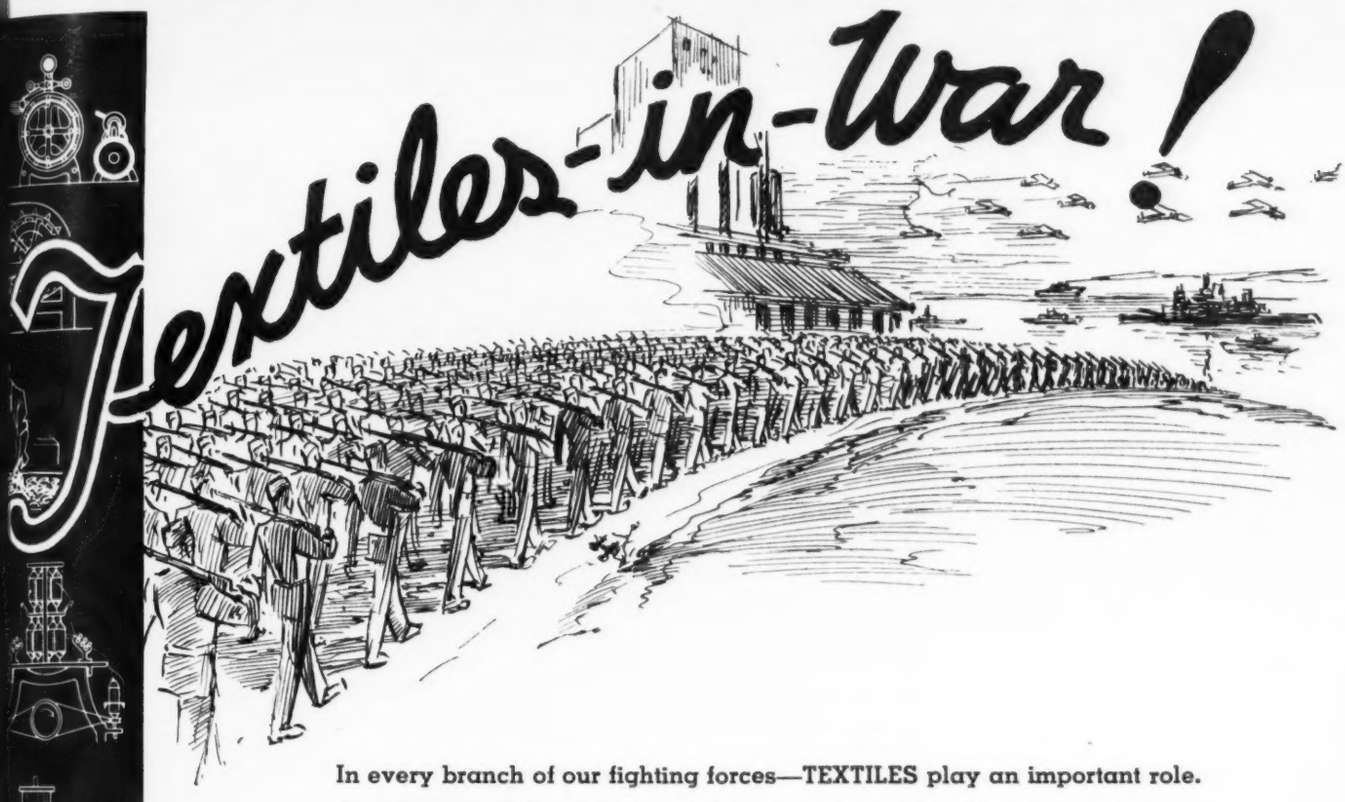
150—Phila Ladies Hosiery Drying Forms with tables sixes 8½ to 11
1—Hurricane Loop Dryer, 7'8" wide x 34'2½" long x 6'3½" high, inside dimensions



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Don't "slow up" for lack of machinery. "MLC's" quality used textile machinery is available to "help WIN THIS WAR."

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1—50 lb. Smith Drum 4-pocket all Monel Metal Rotary Hosiery Dyeing machine, mtr. dr.
1—40" Tolhurst, copper basket Extractor driven by a 3/60/220 v. mtr.
2—42" Hercules, Stainless Steel Baskets, V-Belt, mtr. dr. Extractors with Timers and Safety covers
1—60" wide, 3-cyl. 30" dia. Garnett, automatic with breast, chain driven workers, automatic feed, V-belt motor drive, 3/60/550 roller bearings, clothing good
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2—Bahnson Humidifiers with 3/60/220 v. mtrs.
15—S&W Mod. K Knitters, 48 gge. with striper drums lay in lastex attachments, equipped with dble sole & heel. 4—3" 160 N.; 15—3¼" 172 N.; 1—3½" 186 N.; 5—3" 188 N.; 5—3¼" 204 N.; 5—3½" 220 N.
30—42" R. S. Draper Model K Automatic Looms, 20 harness, mtr. dr.
12—72" C & K (4x4) Tapestry Looms with 1300h Jacquards, mtr. dr.
30—82" C&K 4x1 Auto Looms 25 harness mtrized.
12—92" C & K 4x1 Box Automatic Looms, 20 harness head, warp stop motion, mtr. dr.
10—92" C & K 4x4 Box Looms
4—120" C & K (4x4) 25 harness Looms ,
1—65" Van Vlaanderen Palmer
1—50"Morrison Trune Finishing Machine Quetch Palmer Tenter.
1—67" Morrison Palmer with 2-roll Quetch
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1—42" Rice, Barton & Fales, 7-color Printing Mche. with Dry Cans etc.
2—60" Smith & Furbush Shredders
1—43" Rice, Barton & Fales 8 color Printing Mache. with Dry Cans, etc.
1—54" Textile Mach. Co. 8 color Printing Mach. complete with 2—G.E., 35 HP motors, 220 V., 60 cyl., 3 ph. 415—1250 RPM
1—52" Waldron 12 color Printing Mach., complete with Westge slip ring, motor, 50 HP, V., 60 cyl., 2 ph, 870 RPM
19—144 Sp. Saco Pettee 8x4 Roving Frames.
6—224 Sp H&B long draft Spinners 2¾" gge.
1—78" P & W Model A, 2-blade Shear
1—Saco Lowell 2 cyl. slasher & warper, 1919.
1—66" Johnson 5 cyl. Slasher (cotton system)
1—Saco Lowell Slasher, 58" face, wi Size Box.
1—40' Textile Finishing Tenter Frame with Housing, with 115" opening
1—90' Butterworth Clip Tenter 50" mtr. dr.
2/60 Sp. Atwood 5-B Spinners 3" rings, 5" gge, mtr. dr.
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150—128 Sp. Fletcher Dble Deck Upstroke Twisters, 7" Sp. spacing, each equipped with 2-3 HP mtrs and Fletcher oil well nonbendable type Sp. and balloon separators.
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1—54" Easton & Burnham Waper & Creel. 800 Ends & 800 Extra Ends with mtr.
7—Collins Dble Feed roll Fancy or Novelty yarn Twisters—192 SP. and 180 SP. mtr. dr.
7—18 Sp. Oswald Lever Bottle Winders, mtrs.
4—72 Sp. National Skein Winders, mtr. dr.

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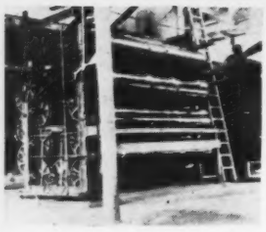

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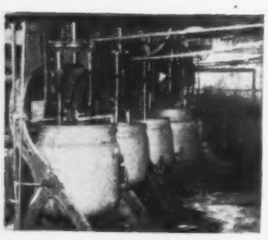
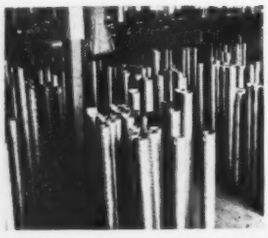


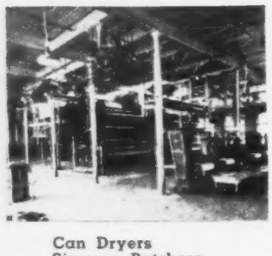
Jacketed Copper Kettles

Hydro-extractor

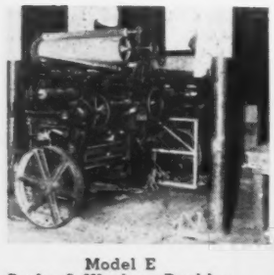


W Bore Copper Rolls

Calendars



Can Dryers
Simpson Batchers



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2—**Rice, Barton & Fales** 10-Color 64" **Print Machines,** complete.
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1—**King & Gerber,** 42" **Extractor,** Copper Basket, self-balancing type.
10—Self Balancing **Textractor, Tolhurst, American Laundry, Adams** and **Troy;** Copper Lined Baskets, 40", 32", 28' 26" and 20".

CALENDERS

1—**Textile** 5-Roll Chasing **Calender,** equipped with 10-Brass Rolls.
2—**Butterworth & Texile** 2 and 3-Roll **Calenders,** 40" and 50" in width.
1—**Butterworth** 42" 2-Roll Hydraulic **Schreiner Calender.**

LOOP DRYERS

2—**Proctor & Schwartz** and **National Loop Dryers.**

TENTER FRAMES

2—**Textile** 90' Swing **Tenter Frames,** 50" wi
Butterworth stainless steel clips, equipped
80' sheet rock insulated tenter frame hous
1—**Windsor & Jerauld** 30" **Tenter Frame,** 50" wi

CAN DRYERS

1—Set 6—**Textile Copper Dry Cans,** 72" dia. x
face.
1—Set **Textile Copper Dry Cans,** 60" x 50",
tical stack.
2—Sets **Textile Copper Dry Cans,** 30" x 50",
tical stacks, 6 and 8 Cans.
2—Sets **Copper Dry Cans,** 25" & 50", horiz
stack, 8 and 7 Cans.
1—Set 24—**Textile Copper Dry Cans,** 25" x
horizontal stack.
10—Sets **Textile & Butterworth Copper Dry Ca**
23" x 48", sets of 8, 10, 23, 25, 29 and 30 Ca
1—Set 22—**Textile Dry Cans,** 25" x 44", vert
stack.
2—Sets **Textile Copper Dry Cans,** 108" x 25",
can, vertical stack.
2—Sets **Textile Copper Dry Cans,** 90" x 25" h
zontal.

FULLING MILLS

6—**Rodney-Hunt Fulling Mills,** Gear Drive.

DOUBLERS

2—**Parks & Woolson** Model E, Doubling **Rolls** and **Measuring Machines.**

FLAT FOLDERS

6—**Elliot & Hall Flat Folders,** with airlift
attachment.
3—**Curtis & Marble Flat Folders.**

Can't begin to tell the whole story!

Reorganizing and LIQUIDATING

There's no excuse for any plant to stand idle when "Consolidated" will either reorganize it for new uses or quickly turn the equipment into cash for the owners. Let us tell you about the broad work we've been doing in plant reorganization, rehabilitation, liquidation — in other words, keeping things MOVING. It may solve your problem instantly!

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MACHINERY ★ ★ ★

. . . . . FINISHING . . . . BLEACHING

PADDERS, MANGLES, QUETCHES

- Textile 50" 2-Roll **Dye Padders.**
- Butterworth and Textile 50" 2-Roll **Starch Mangles.**
- Textile 80" 2-Roll **Mangles.**
- Butterworth and **Morrison** 2 and 3-Roll Quetches, 50", 60" and 72" in width.

BLEACH HOUSE

- Bleach House **Jay Pilers.**
- Bleaching 4-5 Ton **Kiers,** Vomit Type.
- 5 Ton **Kier,** Circulating Type, with external heater, pump & motor.
- Lincoln Double Roll **Chemical Squeeze Rolls.**
- Arlington **Rope Squeezers** with clutch pulley drive.

SANDING & BRUSHING MACHINE

- Parks and Woolson 2-Roll **Sanding Machine,** 60" face.

BEAMERS—BATCHERS

- Van Vlaanderen & Textile 2-Roll **Beamers,** 60" and 50" in width.
- Simpson 60" **Winders,** double covered wood rolls.

LOOMS

32—**Crompton & Knowles** 92" Automatic **Looms,** 4 x 1 box, 25 Harness Cassimere with Textile motors.

VACUUM PUMPS

1—**Connersville Root Blower,** 16 x 16, capacity 1500 Cpm.

1—#4 **Nash Hytor Vacuum Pump.**

Miscellaneous: Scutchers Expanders, Generator Sets, Air Receiver, Sewing Machines, Tanks, Modine Heaters, Motors, Exhaust Fans, Pleaters, Mandrils, Doctor Blades, Gears, Lathes, Accumulators, etc.

DECATERS

2—**David Gessner & Parks & Woolson** 72" and 48" wide, complete with **Nash Pumps.**

PALMERS

1—**Van Vlaanderen** 84" **Palmer** with 2-Roll Quetch and Blanket.

2—**General Machine Co.** 60" **Palmerettes.**

DYE BECKS

25—**Dye Boxes,** stainless and monel lined, 4' to 19'.

Special. Complete Skein Dyeing Plant with 100 Arm Smith Drum Stainless Steel Dyeing Machine.

• *Send for latest complete listing!*

. . . Typical selections

COMPLETE POWER PLANT

3—1046 HP. Wickes Cross Drum Water Tube boilers, ASME, 250# pressure.

1—3500 KW G.E. Bleeder Type Tube Generator.

1—1600 KW G.E. Turbo Generator.

With complete auxiliary equipment. Completely modern, designed for high fuel economy, flexibility of operation and high electrical efficiency.

PRESS

1—**Bethlehem** 400 Ton **Hydraulic Press,** Platen 38½" x 74½" x 4", Ram 20", Double Cloth Tensions, with G. E. 3 HP. AC motor. **Bethlehem** Water Loaded **Accumulator System,** consisting of Deane Triplex Pump, G.E. 5½ HP. Induction Motor, Bethlehem Water Loaded Accumulator System, consisting of Deane Triplex Pump, size 1½" x 8", G.E. 5½ HP. Induction Motor, Bethlehem Water Loaded Accumulator System, consisting of Deane Single Action Pump, size 6½" x 8", with Reeves Variable Speed Transmission.

WORSTED SPINNING FRAMES

25—**Ring Spinning Frames,** 160 spindle each, 3½" pitch, 8" traverse, 1¾" ring, 4" front roll.

SPINNING

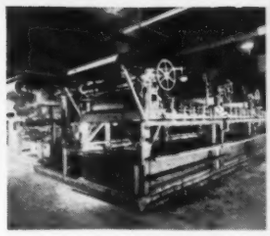
2,000,000 **Filling Bobbins.**
100,000 **Bobbins.**
100,000 **Roving Spools.**
5,000 **Flyer Spools.**

AIR COMPRESSORS

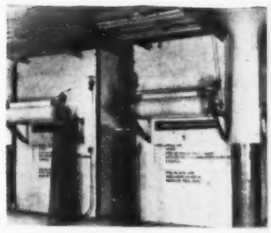
2—**National Brake & Electric Co.** 3-Cylinder **Air Compressors,** Type 3VS, 300 Cu. Ft. 90# pressure, Direct connected to 54 HP. Induction motors.

WATER SOFTENER

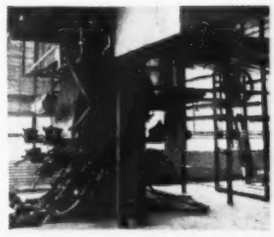
1—**Permutit Water Softener,** 103" high, 63" wide across center, clean out 13" x 17".



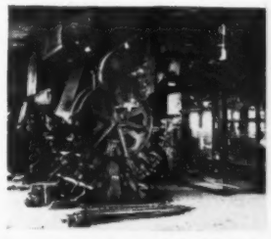
Open Washer



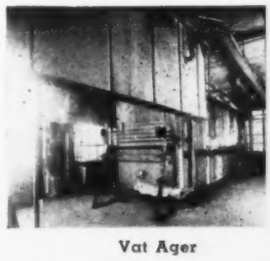
Print Machine Dryers



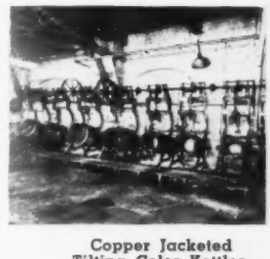
Eight Color Print Machine



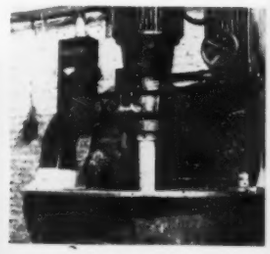
Ten Color Print Machine



Vat Ager



Copper Jacketed Tilting Color Kettles



Hydro-extractor

HELP!

Help us to help other manufacturers

Equipment you're not using now is more than likely on the "MUST HAVE QUICK" list of somebody else. Manufacturers are calling us all the time — we want to buy your idle machines for immediate delivery to other industries. You can help. Rush us a list of what you have — a single item, a complete plant or any quantity in between! Above all — RUSH!

Industry—BUY WITH CONFIDENCE

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FOR 25 YEARS — A SYMBOL OF CONFIDENCE

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SILK MACHINERY EXCHANGE

PATERSON, NEW JERSEY

TEXTILE EQUIPMENT "IN STOCK"

SPECIALS

48 C. & K. Worcester 4x4 78" reed space, 25 harness, Intermediate head woolen looms, individually motor driven, complete with warp stop motion, flange beams, positive takeup and letoff flange beams. Looms in excellent shape, attractively priced.

50—C. & K. Worcester Looms, intermediate head, roller bearing, shock absorber, 20 harness, individually motor driven, 2x1, and 4x4 78" reed space.

40—54" and 56", Reed space, C. & K. Worcester Looms, 4x4, 20 harness dobby and multiplier, individually motor driven.

48—C. & K. Worcester 2x1 Looms, 54", 16 harness dobby, individually motor driven.

30—Model "K", Draper automatic looms, 41" reed space, 20 harness dobby, individually motor driven.

36—#90 Universal Quillers and coppers, individually motor driven or belt driven, Bunch Builders, etc.

22—Draper automatic Looms 66" cloth space Individually motor driven, Flange beams.

40—C. & K. 52" Reed space 2x1 Looms 20 harness dobby Roller Bearing shock absorber Individually Motor driven.

•

ALL ABOVE AND NUMEROUS OTHER SPECIALS AT VERY ATTRACTIVE PRICES

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ALL EQUIPMENT SOLD "AS IS" OR RECONDITIONED AND GUARANTEED

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SIPP WARPERS AND WINDERS

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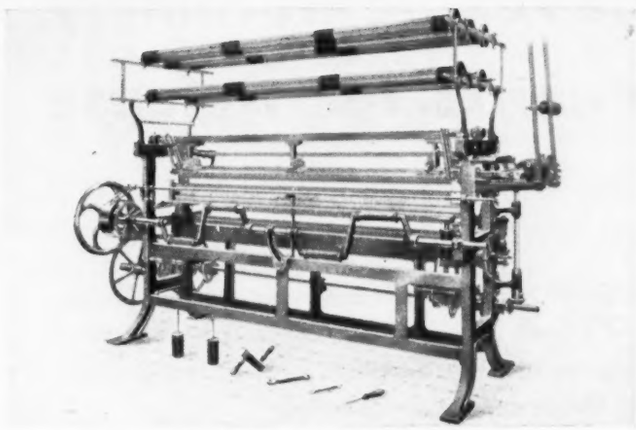
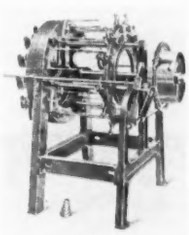


90" RACHELLE KNITTING MACHINE
MAKES CLOTH 90" WIDE, SUCH AS FISH NETS, LAUNDRY BAGS, DISH CLOTHES AND HUNDREDS OF ITEMS.

COMPLETE STOCKS of TWISTING, WINDING, BRAIDING, KNITTING and ROPE MACHINERY *at reasonable prices!*

THESE SPECIAL BARGAINS ARE TYPICAL OF HUNDREDS AVAILABLE TO YOU FOR IMMEDIATE SALE AND DELIVERY

1—1 Haskell Dawes 8"x10" 2 sp. former.
2—20- 16- and 20-spindle Silver & Gay make Yarn Ball Winders.
30—12 Carrier Butt make. Heavy cord braiders for all uses.
150—16 Carrier Butt make. Round cord braiders for hundreds of uses.
4—American Insulated Sgl & Dble Wrapping Machs.
20—48 Carrier Textile and Butt makes, Round Cord Machines.
12—Braiding Machines to make flat tape, with a round cord-edge. **Used on government orders presently.**
150—16 Carrier, Round Cord Braiders, for making cords for Military, Naval and Air Corps; Uniform and Hat Emblems and hundreds of other uses.



550—Various sizes of Braiding Machines for making all types of flat braids, etc. Also for Military and hundreds of other uses.
250—Braiding machines making Venetian Blind Cords.
Hundreds of Braiding Machines for use in making Shoe Laces, etc. Tipping Machines that automatically measure and tip laces, cords, etc., both for fibre and metal tips.
450—Elastic Braiding Machines. For making all types, sizes and patterns of braids for hundreds of uses.
50—Butt Make 7 Carrier Soutache Braiders.
40—12 Carrier #2 Butt Make, Braiding Machines.
7—Triple Head Braiding Machines. 12x16x24 Carrier.
12—12x15x12 Striper Braiders, Textile Make.
75—12x24x12 Striper Braiders, Textile Make.
2—9x9x9x9x9x9x9x9x9x9, (11 times 9) Striper Textile Braiders.
100—Other Striper Braiders in all sizes. These Striper Braiders make all types and designs of Military Braided tapes, uniform grades with stripes and other designs.
35—Special Braiding Machines, our own creation, for making novelty braids, cords and belt materials; shoe strap and upper material; ladies' bag materials, and hundreds of other uses. Large production machines.
300—Braiding machines for making card lacings, toilet seat cover cords, for pull strings, for tying purposes, etc.

ROUND BRAIDERS —SMALL With short legs, 16-Carrier No. 2 Braider FOR BRAIDING ELASTIC AND OTHER ROUND BRAIDED CORDS.

KNITTING MACHINES

A REAL SENSATION:—We have on our premises 20 Upright Knitting machines, 11½ feet long, 3 feet deep, 7 feet high. The weight of each machine is 3500 pounds. These machines can make material up to 90 inches wide. The production is excellent. This is one of the good features. Secondly, you can make blanket materials on the same machine. Blankets made on our machines are warmer and can be made more reasonably. You can also make mosquito nets, hundreds of types of nettings of all sizes, and for all uses. Rugs, and scatter mats. Bed spreads, curtain materials, polo shirt materials, and all types of sport shirt materials. Sweater materials for men and women. Infants blanket materials. Rug fringes, carpet fringes, bed spread fringes, and thousands of other types of fringes can be made on these machines. You can also make all types of materials with elastic threads in them, such as girdles, for shoes and hundreds of other types of elastic materials. These are worth your while looking into. The production on each of the above mentioned items is splendid. You can also make mesh hosiery and mesh glove materials on these machines, of rayon, pure silk, or cotton.
1—Brinton 9" Circular Machine, 8 cut extra cyl.
8—4" 100 Needle Scott & Williams Circular Knitters.
22—Brinton Necktie Knitters, 2 and ¾" Cylinders.
5—2½" 3 cut Brinton Circular Knitters.
14—Tisch & Ruf Knitters, 36" and 38" Needle Gauge. For making various flat knitted articles, such as fringes for all uses, rugs, mats, etc.

ELASTIC, TAPE, DRESS TRIMMING BRAIDING MACHINES. ALL SIZES.

WINDING & SPOOLING EQUIPMENT

14—Oswald Lever Make, Bottle Bobbin Winding Machines, from skeins onto Wooden or Paper Bottles, all sizes, 18 and 24 spindles to each machine, for rayon or cotton.
1—Textile Make, 20 Spindle Doubling Machine.
1—Textile Make, 17 Spindle Cotton Winder, from skeins onto spools or bobbins.
1—60 Spindle Rayon Winders, 30 on each side, skeins onto bobbins.
1—24 Spindle Beezer, or Wrapping Machine. Wraps rayon around cotton core filler.
6—Warping Machines for making warps or beams, warping 96", 3 and 4 yard diameter.
46—Universal #50 Winders, for cones and all types of tube packages.
1—12 Spindle Universal 8" cone winder, from cops or spools onto cones.
25—Southworth Humidifiers, with D.C. Motors. Also some with stands.
200,000 Bobbins and spools. All sizes and for all uses.
100,000 3"x6" Wood bobbins, with metal band heads, 3c each.
1000—Fibre Roving Cans, assorted sizes.

All the above priced reasonably for quick sales. Quite a few of these knitting and braiding machines are set up on our floors, where all the machines are located. What we mean by set up, is the machines are in operating condition with materials such as nets, rugs, dish cloths, cords, flat, plain and fancy braids in them, for inspection and operation.

ROBERT SOLOMON & CO., Inc.

TEXTILE EQUIPMENT SPECIALISTS

162-168 Greene Street **New York, N. Y.**

We Buy and Sell Idle Textile Machinery that may Speed Fabrics for Defense

We're ready to ship this equipment *immediately:*

Agers	Kiers
Beamers	Machine Shop
Boilers	Mangles
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Button Breakers	Copper Print Rollers
Calendars	Palmers
Colour Grinders	Quetches
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Doublers	Skein Drying
Drawing	Skein Dyeing
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Loop Dryers	Shears
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Dye Jiggs	Soapers •
Engraving	Squeezers
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Filters	Tubers
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Generators	

NOW LIQUIDATING

Water Softening and Filtration Plant formerly of the Textile Dyeing & Printing Company, Paterson, New Jersey.

Textile Printing Equipment formerly located Westover Textile Print Works.

GOVERNMENT purchases of textiles have placed a very serious burden on production facilities of all textile plants . . . already working at full capacity.

Idle textile machinery is not helping produce this material. Many plants are desperately in need of vital production equipment and we are doing our best to meet the demand. *We need more machinery.* If you own equipment that's gathering dust in your plant, let us help you turn it into ready cash and, at the same time, relieve the "bottleneck" in some other mill.

We specialize in liquidating entire plants and will be glad to give you an honest appraisal.

If you want quick delivery on textile equipment for immediate operation in your own plant, investigate our machines—they're profit-producing and low in cost. Our past reputation and present business are our best references. Let us know your requirements . . . NOW.

We Purchase Complete Mills for Operation or Liquidation

REPUBLIC TEXTILE EQUIPMENT CO., INC.

40 WORTH STREET, NEW YORK, N. Y.

Robert L. Gilman, *Manager* — **Worth 2-4583**

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OWN and Offer a very large stock of Used TEXTILE MACHINERY

Possibly you can use some of it to your advantage Prices are low. A few items are listed below

PICKERS:

2—Crawford Rag Pickers
1—26" Lumper
1—Harwood 54" Picker Feed, rebuilt
1—Harwood 42" Picker Feed, good
1—Harwood 32" Picker Feed—Excellent
1—Harwood 44" Picker Feed—Excellent

GARNET MACHINERY

1—James Smith, 3-cyl. 60"x30" garnet with auto. feed and breast.
1—Smith & Furbush 3-cyl. 60"x30" garnet with feed & breast.

CARDING—WOOLEN

1—D&F Single Breaker 60x60, all iron const, Bramwell Feed, Garnet Breast.
1—D&F Single Cyl. Card 60" face x 48" dia, all iron Const, Bramwell Feed, Garnet Breast.
1—All Iron 3 Cyl. Woolen Card, 60"x50", with Whitin Tape Condenser for 96 ends.
7—Harwood 48" Card Feeds, Excellent.
1—Rich Hartmann 60" Tape Condenser for 96 ends. With 34" dia. doffer Cyl.
4—National Tape Condensers. 48"x96 ends.

MULES—WOOLEN

2—J&B Mules 240 Spdls x 1¾" gage
1—J&B Mule—270 Spdls x 2" gage
2—D&F Mules—390 Spdls x 2" gage
We have large quanttiies of mule bobbins for sale.

DRESSING REELS & EQUIPMENT

1—D&F 92" Brass Plate Heavy Pin Type Reel.
1—D&F Heavy Single beamer
Several Light beamers
2—Iron Jackspool creels.

FOSTER WINDERS

1—Foster Model 25½, 80 Spdl., 6" Traverse Cone Winder.
1—Foster Model 12, 100 Spdl., 7" Traverse Tube Winder.

LOOMS

30—Model W-2 C&K 84", 4x1, 20 Harness Automatic Looms, Motor driven, excellent.

20—C&K 82", 4x1 box, 25 Harness Automatic Looms, Motor driven, excellent.

16—C&K—92", 4x1 box, 25 Harness Automatic Looms, excellent Motor driven.

16—McClosky Indestructible Fancy Looms, 92", 4x4 box, 25 Harness, belt drive.
2—Knowles 82", 4x4 Box Heavy looms, 25 Harness—Can arrange either belt or motor drive.
6—C&K 72", 4x4 box, 20 Harness Worsted looms, Motor drive.
We have a large quantity of loom beams, Harness & box chain, harness frames, reeds, Heddles, shuttles, bobbins, etc.

FINISHING

1—P&W 84½" Model A Double Shear, #7568 New 1934—Excellent.
1—P&W 66½" Model A Double Shear Rebuilt by P&W. List Saving.
4—P&W 66½" Model A Double Shears, with and without list savers.
1—C&M 63½" Single Shear, excellent.
1—C&M 78" 2 cyl. Cloth Brushing and Steaming Machine; new condition.
1—P&W 63" 2 cyl. Cloth Brushing and Steaming Machine.
1—Cleveland 60" 2 cyl. Cloth Brushing and Steaming Machine.
1—P&W 2 cyl. 70" Teasel Gig, 6 Contact.
3—Gessner 66" Rotary Cloth Presses—excellent

JACKSPOOLERS AND JACK WINDERS

1—D&F Single Comp Type 40"x40 end Jackspooler
2—W. W. C. M. Co. Single Comp. Type 40"x48 end Jackspooler, Quick Traverse
6—W. W. C. M. Co. Single Comp Type 40"x40 end Jackspoolers, Quick Traverse
1—D&F 120 Spindle x 1¾" ga. Jack Winder, 9½" bobbin
2—J&B—120 Spindle x 1¾" ga. Jack Winder, 9½" bobbin
1—J&B—80 Spindle x 1¾" ga. Jack Winder

WORSTED GILLING

1—P.S. Single Hd Single Baller Intersecting Gillbox
12—Balling Head Gillboxes, various makes & pitches.
33—Gillboxes Sgl Can, Double can, and 2 spindle types. Send us your inquiries.

WORSTED DRAWING

We have 35 drawboxes in stock, send us your inquiries.

WORSTED ROVING

4—H&S 24x6" p. Ring Rovers, 4x8 Spools.
1—SL 12 Spindle x 7¼" p x 9x5 Ring Reducer.
20000 4x8 flyer spools.

WORSTED TWISTING

9—S. L. 200-Spdl. x 3½" p. x 5' cap-trap, 1918-20.
3—H&S 192-spdl. x 3½, p. x 5' cap-trap.
9—H&S 168-Spdl. x 4" p. x 5' cap-trap (will take ring changeover up to 3" dia. ring)
1—Sample twister (LMS) 24-spdl. x 3½" p. x 4' frame. Dolly roll cap-trap type.

WORSTED SPINNING

4—H&S 200 spdl. x 3½" p. x 5' Cap frames, 1919
4—S. L. 200 sp. x 3½" p. x 5' Caps frames, 1917
4—H&S 144 sp. x 3½" p. x 5' Cap frames, 1919.
1—LMS—Sample spg. frame—24 spdls.

MISCELLANEOUS

We stock many thousands of bobbins of all types. Also, motors, scales, belting, etc., etc.

This is only a very partial list of the machinery and equipment we own and offer for sale.
Send us your inquiries, also send lists of material you have for sale.

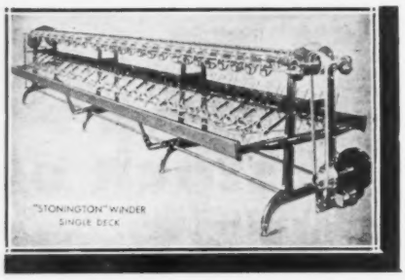
APPRAISALS — LIQUIDATIONS

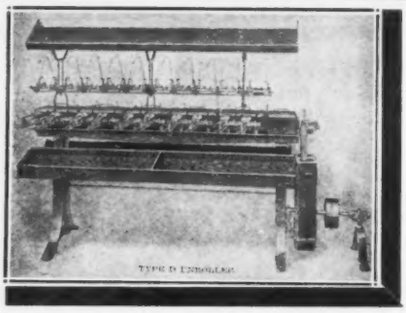
Est. 1922 FRANK G. W. McKITTRICK CO. Inc. 1935

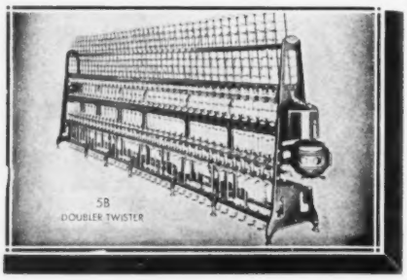
B. A. McKittrick, *Pres.* **Frank G. W. McKittrick, *Treas.*** **R. W. McKittrick, *Vice-Pres.***

Used Woolen and Worsted Machinery

60 Fletcher Street **Lowell, Massachusetts**







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1—72" Dye Pad Brass & Rubber Rolls
1—5 Box Cont. Dye Mche 66" Rubber Rolls
1—5 Box Cont. Dye Mche 52" Br & Rubber
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1—48" Tollhurst Extr. S. Steel Basket
1—30" Laundry Mche Co. Extr. Copper Basket
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8—66" Windle Winders & Doublers
1—66" P&W Winders & Doublers
2—50" V. V. Tubing Machines
1—50" Atomizer Sprinkler
1—47" E&H Silk Folder (Drop Lap)
2—40" Copper Plate Singers
2—18" Butterworth Squeezers
3—Ceiling Swing Folders
1—3 Roll Brass Expander W. Raising Device 50"
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2—60" Palmerettes Gen. Machine Co.
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2—S. & F. 36" Pickers
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1—36" C. & M. Mixing Picker, Atlas Type
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1—40 sp. O. Lever Cop Winder
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1—80" D. Gessner Century Cloth Press
1—80" Single Bed Press, Gessner

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BUHLMAN DYEING MACHINE

62 Arms—reconditioned copper tanks, complete in every detail.

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35—American Seamer and Looper Tables
3000—Wildman & Brinton Cylinders & Dials

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is an index of reliable sources for Used and Resale Textile Equipment and Supplies now available. Consult the **Searchlight Section** in following issues for later offerings.

If you don't see what you want—ask for it. Ask the advertisers. They are constantly adding to their stocks and may have acquired just what you need. Or, shall we ask them for you?

And, when you have special items to dispose of, use the Searchlight Section of Textile World to help you locate buyers. . . . Send a list of your equipment and we will gladly give full information as to space and rates.

Departmental Staff

TEXTILE WORLD
330 West 42nd St. • New York City

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3—S-L Lap Winders, 20", Derby Backs
1—S-L Vertical Opener & Condenser
8—Whitin D-2 Combers, 12" Lap
3—Whitin C Combers, 12" Lap
120—Dels. H & B Drawing, 12" Cans
3—S-L 10x5x108 Sp. Slubbers
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All Makes EXTRACTORS All Sizes
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Address copy to the Departmental Staff

TEXTILE WORLD
330 West 42d St., New York City

1—Butterworth 5-Bowl Calender equipped with:
3—combination cotton & husk rolls 20" in diameter x 50" face. 1—chilled iron roll 12" diameter x 52" face. 1—steel roll 10" in diameter x 52" face. (Above rolls have timken roller bearings). 1—extra combination cotton & husk roll 20" in diameter x 50" face. 1—G. E. 15 H.P., BTA, 550 to 1650 RPM variable speed motor with starting switch.

1—Butterworth 5-Bowl Calender equipped with:
3—combination cotton and husk rolls 20" in diameter x 50" face. 1—chilled iron roll 12" in diameter x 52" face. 1—steel roll 10" in diameter x 52" face. (Top & bottom rolls have timken bearings; 3 center rolls, brass bearings). 1—extra combination cotton & husk roll 20" in diameter x 50" face. 1—G.E. 30 H.P., 1153 RPM motor with variable speed control. 1—3-bar Farrel expander. 1—2-roll winder.

FS90 Textile World
330 W. 42 St., New York City

FOR-SALE

2—three cyl. 30" x 60" Garnetts.
1—three cyl. 20" x 60" Garnett.
3—sets of 60" wide Woolen Cards.
4—60" Apperly Feeds.
6—60" Bramwell Feeds.
3—P & S Condensers.
2—4½" Ring Twisters.
6—60" Foster Winders.
3—Universal Winders.
4—Lindsay Hyde Yarn Reels.
3—Schofield Yarn Reels.
1—4 section Sargent Stock Dryer.
1—P & S Ceiling Dryer.
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187—C & K Cotton Looms.

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for Textile Mills

(Continued on opposite page)

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WANTED

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1—40" Cotton revolving **flat Cards**
1—**Wool tape condenser** 96 ends

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2—Sets of 30 **Copper Dry Cans** 50" wide
1—120" **Tight Washer** with Rubber Rolls
1—**P. & W. Worsted Yarn Skein Dryer** with Humidifying Unit
1—50" **Friction Calender**
1—5-Ton **Pump & Heater Type Kier**
1—Set of 30 **Copper Cans** 60" wide
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1—#7 **Reeves Drive, B. B.**
1—#00-0-1-2-3 **Reves Drive,** B. B.
1—120" **Padder**
1—5' Diameter **Copper** can with Bearings & Gear 50" to 60" wide
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W-87, Textile World, 330 W. 42nd St., New York City

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5" Ring Twisters
6" to 6½" Gauge

Need 4,000 to 5,000 spindles. Quote price, give make, specifications, age, location and how soon available.

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RUBBER COVERING MACHINE

Arnold make preferred. State number of spindles and condition.

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WANTED 6 gangs Universal No. 90 Universal winders with bunch builders.

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BRAIDERS

10—4/ Braiders. 2—16/ Braiders. 2—18/ Braiders. 2—20/ Braiders.
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3—**Looms** for Narrow Fabrics
1—**Guimp Machine**
1—**Slidecord.** 1—**Chenille**

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Please state lowest price, description, etc.

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for Textile Mills

(Continued from opposite page)

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1— 1400 KW. West. 600 V. L.P. Cond.
1— 625 KW. Terry-Allis—600 V. Cond.
1— 500 KW. GE. 2300 V. Mixed P.
1— 500 KW. GE. 600 V. Cond.
1—175 H.P. G.E. Turbine—only

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1—1190 Cu. Ft.—IR—2 stage Direct Motor Driven.
1—1580 Cu. Ft.—IR—2 stage Direct Motor Driven.
1— 888 Cu. Ft. — IR — 2 stage Steam Driven.
1— 599 Cu. Ft.—IR—2 stage Belted
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1— 146 Cu. Ft.—IR—3 stage Belted 2000#

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Driven by 820 H.P. G.E. Turbine.
Condition excellent.

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2— 600 H.P. B&W—200#
2— 500 H.P. Heine—250#
1— 340 H.P. B&W Sterling—150#
2— 160 H.P. B&W Sterling—155#
1— 167 H.P. HRT—150#
1— 60 H.P. HRT—125#

MOTOR GENERATOR

1—75 KW. West. 2200/250 V. 3-wire, CI.

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1—500 KW. G.E. 550 V. 225—RPM.

PUMPS

1—4000 GPM, DeLaval Cent. 195 Ft. Head Driven by 300 H.P. G.E., 2200 V. motor
1—3000 GPM, DeLaval Cent. 290 Ft. Head Driven by 300 H.P. G.E., 2200 V. motor
1—1500 GPM, DeLaval Cent. 290 Ft. Head Driven by 200 H.P. G.E., 2200 V. motor
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(See also "Selling Opportunity" Offered)

EXPERIENCED FIXERS on any type seamless hose machines. Ainslie Knitting Machine Co., 750 Grand Street, Brooklyn, N. Y.

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at 10 A. M. Sharp, Daylight Saving Time.

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Wanted: Equipment, Yarns, Fabrics, See page 232, Dismantling: See page 230

A WAR MESSAGE
to
ALL EMPLOYERS

★ From the United States Treasury Department ★

WINNING THIS WAR is going to take the mightiest effort America has ever made—in men, in materials, and in money! Every dollar, every dime that is not urgently needed for the civilian necessities of food, clothing, and shelter, must, if we are to secure final Victory, be put into the war effort.

An important part of the billions required to produce the planes, tanks, ships, and guns our Army and Navy need must come from the sale of Defense Bonds. Only by regular, week by week, pay-day by pay-day investment of the American people can this be done.

This is the American way to win. This is the way to preserve our democratic way of life.

Facing these facts, your Government needs, urgently, your cooperation with your employees in *immediately* enrolling them in a

PAY-ROLL SAVINGS PLAN

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MAKE EVERY PAY-DAY . . . BOND DAY!

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This space is a contribution to NATIONAL DEFENSE by Textile World.

GPO 16—25943-1 Form No. DSS-BP-2

"We shall need and demand DOUBLED and QUADRUPLED PRODUCTION . . ."

PRESIDENT'S ADDRESS TO THE NATION, DEC. 9, 1941.

"M-Day is here . . . from now on business is under marching orders—fighting the BATTLE OF PRODUCTION."

EQUIPMENT

THE first question before all American industry today is: "Does our production contribute directly toward winning the war?" Never, in the history of America, biggest industrial producer in the world, have production facilities been expanded so rapidly . . . never have such mountains of material of war been produced by American factories. In many instances, existing equipment is being crowded to the limit. Additions to present production capacity are being rushed, more new plants are being built . . . and production still lags far behind the stupendous demands of the President's new WAR PRODUCTION GOALS. One of the crucial needs is equipment—more equipment—and still more equipment—YESTERDAY. When important operations are held up by delayed deliveries of equipment, one sure way of speeding operations is by the installation of good USED equipment, as countless manufacturers throughout the country are doing. Used equipment dealers and other advertisers in the Searchlight Sections of McGraw-Hill publications are supplying this vital need.

★

"Swap Inventories to Relieve Shortages."—Department of Commerce Bulletin. For many months, priorities and allocations have delayed deliveries of parts, materials and equipment essential to the expansion or continued operation of all industry. Many manufacturers are attempting to operate "on short rations"; some have enough and to spare; others have unbalanced inventories—both shortages and surpluses.

War speed-up calls for the pooling of facilities through cooperation of individual producers, swapping inventories to relieve shortages that block production.

PARTS—Inventories

"Get in the SCRAP . . . every ounce counts." Scarce materials, metals, rubber, and surplus new or USED equipment must be made available for war production.—Wilbur A. Nelson, as Priorities Administrator.

The nation-wide "Salvage for Victory" drive of the Bureau of Industrial Conservation is endeavoring to salvage materials and prevent waste. Automobile graveyards are expected to yield 3,750,000 tons of scrap . . . women are asked to carry purchases—to save wear on delivery trucks . . . merchants are asked to save waste paper, metal, rags, rubber—to enable mills and factories to operate at full blast.

MATERIALS

"SEARCHLIGHT" Can Help You Do Your Part . . .

The Searchlight Section of McGraw-Hill publications offer the accepted means used by industry to even up surpluses and shortages that tie up needed capital—or slow up production. Rates are low, and "Searchlight's" wide acceptance gets ACTION—FAST ACTION. If you WANT parts, materials or equipment—used or new—or HAVE a surplus you are willing to sell, to assist some other producer send us details. We shall be glad to send our space recommendations, cost, etc., immediately.

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WAR TEACHES

THE IMPORTANCE OF ADEQUATE EQUIPMENT

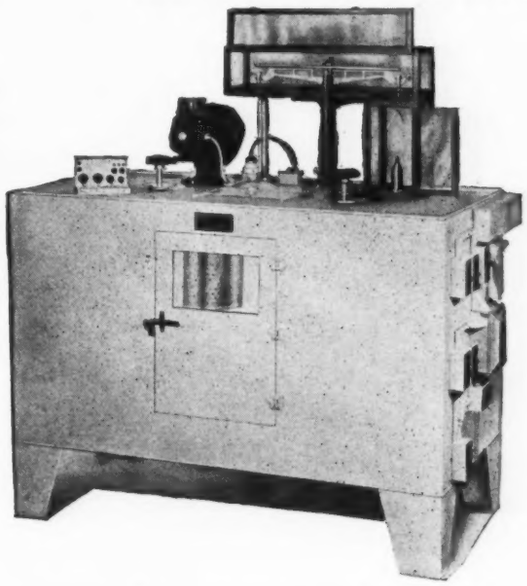
As in war, so in the mill, human energy, courage, and good judgment are of little value without suitable equipment.

Therefore, the modern mill, in its war against financial loss, finds it essential to use

EMERSON CONDITIONING OVENS

TO PROVIDE ACCURATE MOISTURE DATA FOR

RAW MATERIAL, STOCK IN PROCESS, AND FINISHED PRODUCT



Shown above as an example is one of our several models. This is a ten-basket oven, having ten perforated metal baskets 8" dia. x 9" deep. We have both floor and table models for all branches of the industry—wool, cotton, rayon, and silk.

Emerson Ovens are electrically heated and controlled and can be left operating several hours without attendance and without scorching of samples.

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H. G. LORD *comments on*

Rubber

See page 6

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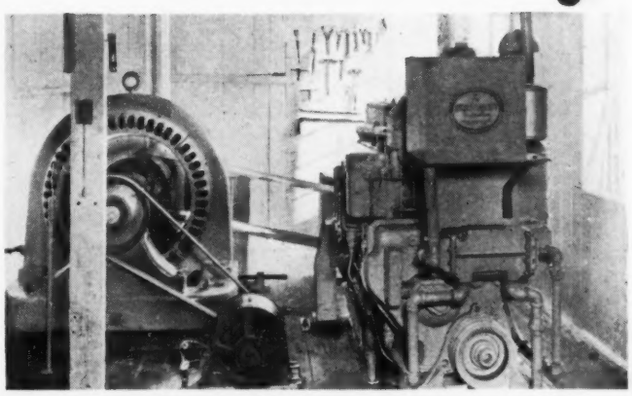
"1c electricity"



THERE are no "demand" charges or "peak load" rates to haunt the owners of The Frissell Fabric Co. in operating their thread and braid mill at Higganum, Conn. . . . The "Caterpillar" Diesel D13000 Engine shown here, driving a 75-kw. generator, provides all the light and power that's needed for the entire plant—on only 4¼ gallons of 6½c fuel per hour.

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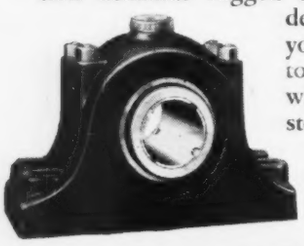

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YOU can save time in these busy days, by referring to your mill copy of the Textile World Yearbook and Catalog whenever this question comes up in the day's work. Beginning on page 107 of the 1941 edition, you will find an Index to Textile World for 1940.

The Index to Textile World for 1941 is now in preparation and copies will be sent free of charge on request.

Answers to hundreds of other questions are also contained in this handy "looking-up" place.

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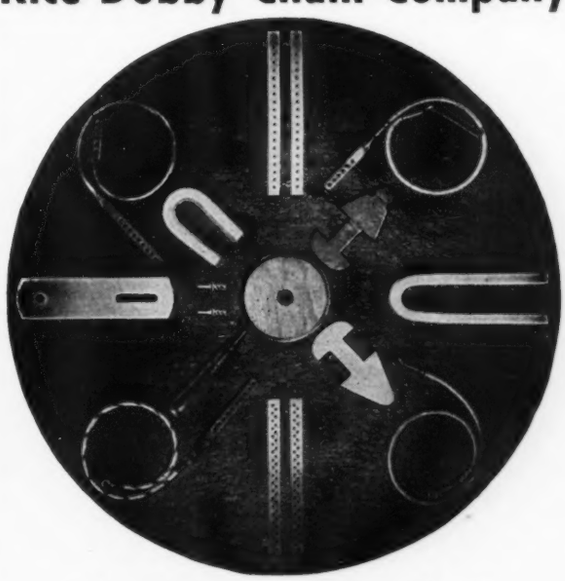

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MANHATTAN IS ENLISTED UNDER THE EAGLE'S BANNER

This war will be won by *Offense*, not by Defense. The transition is under way through the mobilization of every strategic material, of every man, and every machine in production for war—huge production dedicated to the single purpose of Victory.

In the strategic materials, rubber shoulders a great responsibility—a responsibility which CONDOR and MANHATTAN have long been qualified to assume.

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